The Journal of the American Medical Association

Published Under the Auspices of the Board of Trustees

VOL. LXIX, NO. 13 CHICAGO, ILLINOIS SEPTEMBER 29, 1917

ADEQUATE MEDICAL SERVICE OF THE FUTURE *

OTTO P. GEIER, M.D.

CINCINNATI

In the strikingly evolutionary programs of the twentieth century, no group of individuals is about to have its old-time relationships more radically changed than the group of physicians. Many factors, social and economic, will be responsible. Some of these most evolutionary changes will promptly and voluntarily come from within the profession; others will be forced on the profession. It is evident that we have for all time passed beyond the stage of the absolutely individual and personal relationship of family physician and patient, to one in which the community steps in to safeguard itself against any abuse of this circumscribed relationship, and demands collective action in matters of health for the benefit of all.

SOCIAL AND ECONOMIC PROBLEMS

The concentration of population in cities has developed problems beyond the control of the private physician. In the trail of density of population have come the tenement, sweat-shop, bad housing and living conditions, tuberculosis, alcoholism, venereal disease, poverty, delinquency and crime. The development of industry with its occupational hazards has created another series of health impairments which the family physician may have the knowledge to alleviate, but the prevention of which is entirely beyond his control. The establishment of the public health department was a partial answer to these new social requirements.

The coming of industrial concentration presented other social disorders. We have witnessed the development of class feeling and the estrangement between labor and capital. Strikes and lockouts were only a consequence. The valued relationship of master and man passed out. They no longer had real personality for each other, no longer worked side by side, they lived further apart, thus making the difference in their scale of living more evident. The gulf between poverty and riches was widened. Unemployment, seasonal employment, the physically unfit, the unemployable, the industrial hobo, the labor turnover, all loomed up as medical and social problems of such huge size as to spell defeat of their solution.

Society is realizing that the problems of industry are largely its problems; that the major portion of the community is engaged in industry and that when badly administered, it is therefore a menace to the peace, health and happiness of the whole community. When properly administered, it is of inestimable value socially and economically. Whatever industry does, because of its size, is impressive.

Has the medical profession kept pace with society in its realization for the necessity of community thinking, community action? Has the profession recognized that its work is fundamental to the solution of every social problem thus far presented? Are we thinking in terms of the mass, and adjusting our work to the new social needs? Have we fully realized our obligations, our opportunities? Do we actually sense the full meaning of the fact that every social disorder has a medical aspect? Do we really appreciate that most social misfortunes are founded in the neglect of the laws that make for a healthy mental and physical state, and that it is our bounden duty to apply ourselves to these tasks? Do we understand that these social disorders call for a new medical order? To the extent that we do understand, we shall be either producers of social reform or merely its by-products. Ours is the choice.

It was with these thoughts in mind that your officers deviated from the usual style of program for the Section on Preventive Medicine and Public Health, and have endeavored to encourage an extended discussion of the social and economic status of the practice of medicine. In thus drawing your attention away from the discussion of detail of administration, away from the refinements of the application of scientific and hygienic measures, I hope to visualize a broad concept of the potentiality of the socially minded physician in private practice, in public health practice, and especially in industrial practice. I am trusting that the discussion may point the way toward a more adequate practice of medicine, the medicine of tomorrow.

Ours is no effort by legislation to thrust revolutionary methods on the members of our profession. It is rather to set out in bold relief some of the rational and evolutionary processes that are taking place, and may yet take place, within the profession; to measure, if possible, their relative social values, and to deduce from this study the direction in which medicine must go to meet the new social order, to produce adequate medical service. I shall confine this discussion to the consideration of three of these well defined tendencies:

1. Higher standards of private practice by refinement in diagnosis and treatment through group practice.

2. Higher standards of public health practice (emphasizing school dispensaries).

3. The development of industrial medicine — the new specialty.

* Chairman's address, read before the Section on Preventive Medicine and Public Health at the Sixty-Eighth Annual Session of the American Medical Association, New York, June, 1917.

Scientific attainment will come through the emphasis of the first. The application of this science to the ultimate social good will proceed largely through the latter two. All three together, through years of patient effort, will make for that final goal, adequate medical service.

In contrast to the stated need for years of evolutionary growth, the adequate medical service is being heralded as possible of accomplishment over night, by the mere process of legislative action, changing the method of compensating the physician through a central collecting agency. Some of us are ready to affirm that there is an actual shortage of adequate medical service both quantitatively and qualitatively, and that, therefore, no kind of legislation can make it purchasable by all or for all; that the chief social need is for the development of some organized plan of reform within the profession that will eventually produce and make procurable adequate medical service.

We are deeply indebted to the proponents of social insurance for setting forth the direct relationship between poverty and disease, for emphasizing the economic advantage to society of grappling vigorously with the problem of disease, and for pointing out the shortcomings and the inadequacy of present medical service. The argumentation has crystallized recognition of the immense contribution that scientific preventive medicine should make to the nation's better health. But, in their unfortunate haste to legislate, and in their intolerance of further discussion, they have not taken time to write into their instrument the fundamentals that attack disease and thereby prevent poverty.

It is not my purpose to decry compulsory sickness insurance, but to present a partial program for the socialization of medicine which will be worth while for itself, but which incidentally must finally become the foundation of any rational health insurance plan against which will be found but few opponents.

As the proposed health insurance bill revolutionizes the relationships of the physician, we are by that act immediately threatened with a new future for the practice of medicine. Is it not timely, therefore, that the medical profession should decide what that future shall be?

The subject of adequate medical service is of vital interest to the wage earner, the political economist, the physician, the employer and the public. Ours is an effort through group practice or a symposium discussion to diagnose our social miseries, and then to write a prescription. It is fair to assume that if a program can be devised that will meet the needs of the individual, it can probably be extended advantageously to meet the needs of the community.

What are the individual's social needs?

1. Health, so that he may work effectively and thereby earn a good wage.

2. Employment in an industry free from health and accident hazards.

3. A healthful home accessible to his work.

4. Intelligent medical care in time of illness.

5. Protection to his home and industry.

6. Good schools for his children which safeguard the health.

7. A health department which will protect his family against contagious diseases, and safeguard his food supplies.

8. Healthful recreation for himself and family.

It will be seen at a glance that his success and happiness are predicated on his health and that of his family; that this health is possible only through collective action, and that the family physician appears only when some health agency has failed to prevent disease.

For the reason that most physicians are still individualists and have failed to recognize that health is no longer a personal matter, a discussion of the necessary changes in the practice of medicine is timely.

A conviction has been born out of considerable observation and experience in philanthropic and social work that physicians do not comprehend their direct relation to sociology. The physician should be the leader in community thought in all problems of disease, insanity, crime, delinquency and dependency. To do so, however, he must have a wide angled vision of social disorders.

If disease is so costly, what definite and practical means are now at hand to reduce that loss? How far can we prevent disease? To those who have given only cursory thought to this subject, the annual loss of $500,000,000 charged to illness seems impressive. But let us consider what the great economic and social wastes are that make for sickness and poverty. Let us see whether these wastes are preventable, and if so, should not society rather give its attention to this worthwhile program which, in accomplishment, will be striking at the roots of the evils which to many appear momentarily to justify the medical and social revolution involved in compulsory sickness insurance?

Tuberculosis, it is said, claims an annual economic loss in this country of nearly $500,000,000. Bad housing, bad living, alcoholism, venereal disease, and occupational diseases would surely add an equal number of millions. The excessive annual labor turnover, or the quick hiring and firing of help is responsible for another $500,000,000. Voluntary absence from work due to personal reasons or lack of application causes an annual loss of more than $500,000,000.

Now these social and economic losses, totaling billions, are all preventable if society is really in earnest about improving its fundamental conditions and those of the medical profession. Remove these drains on the wage earner's health and purse, and he will need none of the proffered aid from the state in the guise of compulsory sickness insurance.

We can form some estimate, for instance, of the cost of alcohol and venereal disease to society, if we take the sum total of the cost of prison administration, maintenance of almshouses, institutions for the insane and feebleminded, the cost of caring for delinquent and dependent children, the blind, and the cost of the erection of hospitals, and particularly the care of sickness due to the factors of alcohol and venereal disease.

Alcohol is charged with an increased mortality of from 25 to 75 per cent. in its users. The morbidity must follow about the same curve. Will the proposed model health insurance bill reduce alcoholism or venereal disease by one iota? On the other hand, would not some constructive program looking toward the reduction of these enormous burdens on the community be the most logical way of immediately reducing poverty and thereby furnishing a purchasing power for medical service? Considering the long lasting financial drain of tuberculosis, will the mere payment of two thirds of the wages make the slightest dent in the fearful economic loss from the white plague? This disease can be finally controlled only by

early diagnosis. The early diagnosis and cure of tuberculosis can come only through higher standards of medical practice, medical supervision, physical examinations and reexaminations, through better housing conditions and sanitary measures, and through the reduction of alcoholism and venereal disease on which this plague is so largely engrafted.

SOCIAL IMPROVEMENT THROUGH MEDICAL IMPROVEMENT

What plan for social improvement is worth our time, our discussion, our money? If we, as physicians, would be successful in the improvement of the health and happiness of the nation, we must at the outset reorganize both private health practice and public health practice. Both must be placed on a higher plane of efficiency. Next, we must set up adequate public health machinery by reorganizing the federal, state and municipal health work. This work must be entirely removed from political control, so that scientific attainment and spirit may pervade the whole organization, and then we may have the maximum of coordination and cooperation throughout this machinery for the attainment of 100 per cent. efficiency in working for public health. The proposed health insurance bill affects but 30 per cent. of the population (industrial workers). Any plan for health betterment should include 100 per cent. of the population. Good health pays. It should be demanded of the rich as well as the poor. We can well afford to extend our health department facilities so that we may know about the living and health conditions of all of the people.

How can this best be accomplished and by what agencies?

1. We must provide the private practitioner with the opportunity of higher standards of practice.

2. We must raise the standards of public health practice.

3. We should encourage the extension of industrial medicine.

These three factors will produce better health, lessen disease, and increase the number of working days, as well as working capacity, thereby reducing poverty and at the same time increasing the purchasing power for better standards of living, including the purchasing capacity of adequate medical service.

HIGHER STANDARDS OF PRIVATE PRACTICE THROUGH DIAGNOSTIC CLINICS

What share of the $500,000,000 loss which is charged to illness is due to unnecessary length of illness on account of lack of diagnosis, faulty diagnosis or faulty therapeutics? Loss from illness can be tremendously reduced through the establishment of diagnostic clinics so that 100 per cent. of the people may enjoy the advantage of the most scientific medical and surgical knowledge obtainable. These diagnostic clinical stations would afford to all physicians in their daily work the same facilities as extension courses and postgraduate work. It is difficult to imagine a better method of raising the standards of medical practice.

The group plan of practice, the furnishing of diagnosis, should be made free, or supplied at a minimnm cost, so that 100 per cent. of the profession may keep in daily contact with the progress of scientific medicine by taking their patients to consulting clinics. Today in large cities 20 per cent. of the profession only have access to the scientific equipment of hospitals and public diagnostic research laboratories, and the 20 per cent. have these advantages at the cost of the 80 per cent. of the public and the 80 per cent. of the profession. By making diagnostic clinics free, or practically so, we shall enormously stimulate accurate diagnosis, systematic treatment, and preventive health work. These diagnostic clinics should be under the control of the health department. Health departments today make Widal tests, sputum examinations, Wassermann tests, diphtheria cultures, and send their men to confirm diagnoses of contagious diseases. The extension of this work to more complete diagnosis should not be objectionable.

Hospitals should primarily be teaching centers for all the physicians of the community as well as for medical students. Too often public and semipublic hospitals serve the selfish purposes of a fortunate few who, while claiming altruistic motives, deny to the profession at large, and therefore to the public, the educational advantages of hospital and clinical facilities. Specialism is all too rampant, and forbids the general practitioner a place in the sun.

THE SCHOOL DISPENSARY

The tremendous reduction in loss from illness occurring through the operation of industrial dispensaries suggests the extension of this principle to the schools. If full time physicians were placed in charge of all-day dispensaries in schools, making physical examinations of all children, and prescribing for their minor ailments, using the public diagnostic clinics previously referred to for confirmation of diagnoses, a similar reduction would take place in lost time from school as has taken place in lost time from work through the operation of all-day industrial dispensaries. Many universities have already instituted such medical supervision and care of the students. Industrial workers and schoolchildren comprise, perhaps, more than 80 per cent. of our population that would thus be reached by intensive preventive work and treatments in the daily clinics. The school dispensary in reaching out and supervising the child of preschool age, now utterly neglected, will serve a great social purpose.

THE IMPORTANCE TO PUBLIC HEALTH OF THE INDUSTRIAL DISPENSARY

If war has proved anything, it is that military success is dependent on industrial efficiency of the country. The health of the industrial units has loomed up as of paramount importance. We are equally concerned with the health of the individuals in these units in peace times, since they form the major portion of the community.

Perhaps the greatest change that has come in medical practice has been the development of the field of industrial hygiene. It is now taking the whole time of thousands of physicians in the medical supervision and care of employees, and it would seem that the beginning has just been made. No doubt this situation has been stimulated by workmen's compensation acts, but it is equally due to the awakening social consciousness on the part of the manufacturer. He has learned that the health of the worker is a definite asset in his business. Medical care in industry is not a charity. It pays good dividends. With the discussion for social insurance, we may look for a still greater extension of this work, and a more general employment of physicians in industry. The caring for occupational diseases, under workmen's compensation com-

missions, which is sure to come, will further stimulate the interest of industry in industrial sanitation and supervision of employees.

In strong contrast to compulsory sickness insurance, the industrial dispensary plan assures constant watchfulness over the health of the industrial worker, and brings to light economic pressure for the elimination of industrial hazards. At the same time, the wage of the worker is raised because such care increases his capacity for work and therefore still further reduces the necessity for charity in one form or another. It adds a new arm to the health department, and makes possible preventive medicine such as we have never yet dreamed of.

It does not take much imagination, therefore, to foresee the time when practically all of the industrial workers will be under daily supervision through industrial dispensaries. For the first time, then, we can begin to collect accurate data on morbidity. The very limited registration reflects the backward state of scientific preventive medicine. Absence from work is an economic question, and industry is going to know the reason why a man is off from work, and from what illness he is suffering. The employer is going to concern himself to the end that the employee's medical attention is of good quality. He will be interested in his food as well as in his housing problems. As to the claimed loss of nine days per year per man, or $500,000,000 on account of illness, private initiative, through the industrial dispensary, has shown that this loss can be reduced by one-half without charge on any one but the employer, and this money is gladly spent because it is economically sound to do so.

Now the questions arise, What relationship will this new industrial medicine bear to public health work? Should it not have some kind of supervision from the health department so that its work may be best coordinated? And lastly, Would not industry cooperate in making industrial hygiene compulsory?

This type of socialized medicine will be intensively preventive, and entirely democratic; it will discover disease in its incipiency; it will prevent loss from illness instead of merely paying, through compulsory sickness insurance, a certain fraction of that loss; it will attack directly such problems as bad housing, venereal diseases, alcoholism and tuberculosis, and thereby make a fundamental contribution to social welfare. In comparison, the proposed sickness insurance bill is merely palliative, and actually tends to cover over and hide the various "social ulcers."

If we were to socialize medicine to the extent suggested, we would improve that time-honored and most desirable relationship between the family physician and patient. This immediate and definite response to social need would avoid the lowering of standards that is likely to come with the introduction of the panelized physician. Unless compulsory sickness insurance can be so devised as to place chief emphasis on prevention of disease rather than the giving of financial relief, it will actually jeopardize present health work by further reducing the present inadequate budgets. Through the socialization of medicine, the raising of the standards of medical practice, along with the extension of preventive work, illness to the industrial worker and to the rest of the public might well be reduced by one half. It would then follow that the distribution of the loss from nonpreventable diseases could more rationally be undertaken by some insurance plan.

It appears that no social progress in matters of health can be made which is not preceded by progress in the practice of medicine. The medical profession, however, will be limited in its progress unless it recognizes the close interrelationship between social work and medical work. These must be coordinately developed.

Let us now begin within the profession "a clean up and brush up campaign." Let us "put our own house in order." Let us be certain that we have given close attention to the social needs of the community. We may stand erect in the knowledge that we have always given unstintingly of our energy to make the world better for our living. If we are fully awake to our social obligations and opportunities, we need not commit the error of permitting well meaning reformers to mobilize our forces. It is our business to formulate social programs, not ours to accept, unchallenged, programs which place uneconomic burdens on us. Who are better equipped to write a social prescription than the members of the medical profession? Before making any additional sacrifices, we want to be "dead certain" that the other social groups are doing their part, and that the sacrifice is justified. If society at large will do her share in correcting her own evils, the medical profession can be counted on as always to cooperate and to do more than its share.

CONCLUSIONS

1. Private health practice and public health practice must be improved.

2. The knowledge of the prevention of disease, its diagnosis, and cure must be advanced.

3. Higher personal and ethical standards must prevail.

4. This better day will be hastened by a more general adoption of the group practice plan.

5. More men must fit themselves for the distinct specialty of industrial medicine.

6. The supervision of schoolchildren and children of preschool age should be extended through the establishment of school dispensaries.

7. These methods together will constitute an adequate medical service, and be a forward step in the ultimate socialization of medicine.

ABSTRACT OF DISCUSSION

MR. LEE K. FRANKEL, New York: The fundamental error that has been made in the dicussion of this subject is due to lack of realization as to what insurance means. Primarily, insurance has no thought of prevention. The advocates of social insurance have said much about the proposed compulsory insurance bill carrying with it prevention of sickness. If we will only realize that, fundamentally, insurance is not prevention, but that it is indemnity for loss, we may get together on a basis for legislation satisfactory to all. Health insurance, basically, is intended to replace wages which individuals lose by illness. This is a comparatively simple matter: it means the preparation of a morbidity table in order to determine the cost. So far as this payment of claims is concerned, insurance involves the medical profession; but it involves it only in so far as the skill of the medical practitioner is required to determine whether the individual who claims benefit is or is not entitled to benefit.

Where the confusion has arisen, not only here, but abroad as well, is in the fact that the medical practitioner has been expected to perform this one primary and important function, but, in addition thereto, to give medical treatment and care.

When you realize that medical men have deliberately

banded themselves together, have gone on so-called strikes, and have refused to give treatment, in absolute opposition to the ethics of the profession, you can realize what social health insurance in Germany has developed. If there is one thing we want to avoid, it is the repetition of that in the United States. The question of medical care, the question of treatment, is a thing apart from the payment of cash benefits. Whether we shall get away from the theory of the individual medical practitioner, with his fee, and have salaried medical practitioners, cannot be determined by the outsider; it must be determined by the profession itself; and until the profession has given careful consideration to this matter, has come to some agreement, we cannot develop any efficient and thorough scheme of sickness insurance in the United States.

DR. JOSEPH GOLDBERGER, Washington, D. C.: In my judgment there is no matter that is likely to be such a powerful incentive for the exercise and practice of preventive medicine as health insurance. As an illustration of the principle involved, I want to cite the parallel phenomenon that we are seeing at the present time in connection with preventive medicine in a field related to health insurance, namely, life insurance.

Now, you all, I think, know the splendid work that the Metropolitan Life Insurance Company, for instance, is doing toward the conservation of health and the prevention of death, simply because it finds that it is a matter of dollars and cents; that it is a matter of economy to prevent death. Now, it seems to me that when we have some system of health insurance, then the prevention of sickness will become a profitable business to the organization insuring against sickness. When it comes to the question of organization and administration, that is a matter about which I have no opinions. The point, however, that I wish to emphasize, and that I think is of fundamental importance, is the one that I have just mentioned: that health insurance makes the conservation of health and the prevention of sickness a matter of dollars and cents, a most potent and driving force.

DR. OTTO P. GEIER, Cincinnati: May I insert a comment on Dr. Goldberger's statement as to the likelihood of economic pressure bringing about preventive work? If he will go to Ohio and study the workmen's compensation law and see the ever-increasing cost per $100 of insurance in the various industries, and note how relatively indifferent the manufacturer is to that increasing cost, he will take a different view as to the rapidity with which people will respond to preventive work under social insurance because of economic pressure. What actually happened was that industry opposed the workmen's compensation act. Once adopted, the industries accepted the situation and the rate per $100 of pay roll for each class of industry. When the rate went up 5 cents, 10 cents, 15 cents, 20 cents per $100, little or no attention was paid to it. Industry had acquired an immunity against any economic reaction. The fact remains that industry is not trying to reduce accident through a desire to reduce the rate. The real reason for industry's interest in reducing accidents is a realization that the man's absence is expensive because of the lowering of production, and because by reducing accidents industry also reduces the expensive labor turnover.

Detecting Adulteration in Tea.—A new method of detecting adulteration in tea has been described by L. Rehfous in the *Bulletin* of the Botanical Society of Geneva (Switzerland). It involves an examination of the stomata, which are quite different in *Thea sinensis* from those of the leaves used for adulteration. In *Thea* the guard-cells of the stomata possess, on their inner surface, a very strongly marked layer of cutin, which is prolonged into a beak or hook, and which is distinct from the beak which closes the ostiole. Mr. Rehfous finds these features, with minor variations, in all of numerous kinds of tea examined, and they appear even in the sepals of the tea plant. The only leaf used for adulteration that bears much resemblance to *Thea sinensis* is the leaf of Camellia (also a species of *Thea*), but a transverse section of the latter shows that the hooks of the stomata are very slightly developed.—*Scientific American.*

A CRITIQUE OF BANTI'S DISEASE*

ELI MOSCHCOWITZ, M.D.
NEW YORK

INTRODUCTION

The disease described by Banti has received fair attention from writers on clinical medicine, but curiously, very little from pathologic anatomists, and rarely from both. As a consequence, the literature on Banti's disease affords a most disjointed impression, and leaves little material on which to base an estimate of the validity of Banti's disease as a nosologic entity. Indeed, in order to form a clear idea as to what Banti's disease is, it is necessary to turn to the articles written by Banti himself. Then we find that one of two things has happened. Either the observer has not taken sufficient pains to find out Banti's own specifications, or he has frankly committed himself to Banti's views, without the slightest, or only faint-hearted, attempts at criticism. Practically the only criticism of Banti's views has come from pathologists and, significantly enough, the general tone of it is one of guarded skepticism. We therefore meet with the strange phenomenon of a disease being almost whole heartedly accepted by clinicians, and only negatively, so to speak, by pathologists. As an attempt at reconciliation of these two views various modifications of Banti's conceptions have been proposed, which have resulted only in making "confusion worse confounded," so that nobody, not even Banti himself, as I shall show, knows definitely what Banti's disease connotes.

It seems necessary, therefore, to resurvey our ground and subject the vast data that have been gathered to a comprehensive critique, in the light of both clinical medicine and pathologic anatomy.

REPORT OF CASES

This study was instigated by the report of the following two cases:

CASE 1 (Beth Israel Hospital Pathologic Report 4467).—*History.*—M. W., a man, aged 60, married, admitted July 25, 1913, for one year had complained of general weakness, which slowly increased. For the last half year, he noticed a yellow tint of the skin. He had gone to bed five weeks previously with swelling of the ankles and feet. At times he had slight vertigo. There were urinary, respiratory or digestive symptoms.

Physical Examination.—The patient was emaciated and had edema of the ankles and the eyes. There was evidence of profound anemia, and the skin had a yellow tinge. There were signs of a chronic tuberculosis of both lungs. The left heart was dilated, with a rough systolic murmur in the pulmonic region. The liver was palpable 3 inches below the costal margin. The spleen extended from the seventh intercostal space to the level of the umbilicus; its edge was irregular; it was soft in the upper and hard in the lower portion. The abdomen contained fluid. The blood count on admission revealed 2,850,000 erythrocytes. These were progressively reduced until two days before death, when they were 1,200,000. The leukocytes were 7,000 on admission, and varied around this number throughout the patient's illness. The hemoglobin was 35 per cent. at the outset; a day or two before death it was 10 to 14 per cent. There was evidence of anisocytosis and poikilocytosis, and occasional microblasts were present. The temperature varied between 98 and 100 F. The pulse was not rapid. A test meal revealed blood in

*From the Pathological Laboratory of the Beth Israel Hospital.
* Read before the Section on Pathology and Physiology at the Sixty-Eighth Annual Session of the American Medical Association, New York, June, 1917.

the gastric contents. The clinical diagnosis was Banti's disease. The patient died, Dec. 8, 1913.

Anatomic Diagnosis.—Necropsy revealed emphysema and healed tuberculosis of both lungs, chronic pleurisy with adhesions, hypertrophy and dilatation of left ventricle, atheroma of aorta, thrombotic fibrous angioma of liver, chronic diffuse nephritis and splenomegaly. The spleen measured 24 by 20 by 15 cm. and weighed 1,165 gm. (liquor formaldehydi). It was densely adherent to the costal wall, and the capsule was thick, dense and resembled *Zuckerguss* (sugar-icing) in appearance. In the upper part of the convex surface was a shallow depression in which the capsule was unusually thick. Section through this area revealed a thin plaque of lime. The pulp was firm and elastic. It was a deep reddish-purple, and the surface was smooth. The pulp did not scrape. Connective tissue trabeculae, both large and small, were enormously increased. The larger trabeculae were especially prominent and sprang forward from the cut section. Malpighian corpuscles were not visible.

The liver presented a slightly nutmeg-like appearance. There was no cirrhosis.

Microscopic examination revealed chronic congestion and chronic tuberculosis of the lungs; brown pigmentation of the heart muscle; slight chronic congestion of the liver (no cirrhosis); slight interstitial pancreatitis, and marked chronic diffuse nephritis.

The capsule of the spleen was much thickened, and in places showed areas of hyaline degeneration. The predominant lesion was a profound fibrosis. The new connective tissue was either pure fibrous and surrounded the splenic veins, or was more cellular and then appeared as masses or strands throughout the organ. The pulp was deeply engorged with red blood cells. The pulp cells showed a marked diminution in cellular content. The cells consisted mostly of lymphocytes; many cells were of the plasma type; there were a few large cells of the endothelial type and a few large multinucleated cells. The splenic veins were normal in size. Their lining epithelium was not swollen. The trabeculae were enormous in size. Their blood vessels showed thickening. The malpighian bodies were few in number and very small. A small number showed fibrosis proceeding eccentrically from the central artery. There was no blood pigment. The splenic veins in the pedicle showed enormous thickening of the intima, forming veritable projections into the lumen. The walls showed a profound increase in connective tissue with hyaline degeneration. There were extensive lime deposits in the walls of the veins. The arteries showed slight thickening. Sections of spleen and vessels stained by Levaditi's method showed no spirochetes. The lymphatic glands were normal.

CASE 2 (Beth Israel Hospital Pathologic Report 7288).—*History.*—R. K., a woman, married, aged 47, Russian, housewife, admitted, July 15, 1916, never had had children, but had had twelve miscarriages. Her illness dated back twelve years, when she was sick for some months with an attack similar to the present. She had hemorrhages from the mouth and bowels, with swelling of the abdomen and feet. Ten weeks previously she had had a hemorrhage from the mouth and bowels. She also noticed at that time swelling of the abdomen and feet; her appetite was poor; she had occasional nausea but no vomiting; she had precordial pain with palpitation and occasional fainting spells, occasional headaches, and much weakness, and had lost considerably in weight.

Physical Examination.—The patient was pale and emaciated. The spleen extended nearly to the umbilicus; it was hard, rough, irregular and lobulated in outline. There was much fluid in the abdomen. The other organs were negative. The red blood count was 3,460,000; leukocytes, 14,200; hemoglobin, 50 per cent. The differential count gave: polymorphonuclears, 85 per cent.; lymphocytes, 12 per cent.; eosinophils, 3 per cent. The feces were tarry and give a reaction for blood. The temperature and the pulse were normal. The Wassermann reaction was negative.

The abdomen was tapped twice, and each time from 9,000 to 10,000 c.c. of clear fluid were withdrawn.

The clinical diagnosis was Banti's disease. The patient died, Aug. 18, 1916.

Anatomic Diagnosis.—Necropsy revealed brown atrophy of the heart muscle; slight atheroma of mitral and aortic valves; healed tuberculosis of the bronchial lymph nodes; chronic perihepatitis; slight chronic congestion of the liver, but no cirrhosis; chronic diffuse nephritis; chronic peritonitis, and splenomegaly with multiple healed infarcts containing lime and bone.

The spleen measured 25 by 15 by 7.5 cm., and weighed 3,840 gm. The surface was irregular and lobulated, with numerous deep depressions to which, as a rule, the omentum was densely adherent. At its upper part a portion of the spleen about the size of a baseball had been almost completely cut off from the remainder of the organ by a deep fissure. There were numerous other deep depressions due to the scars of healed infarcts. Most of these scars contained lime, and some of them bone. The deep fissure described above contained an unusually large plaque of bone. The capsule was distended, and averaged about 4 mm. in thickness. On section, the parenchyma was brownish red; the pulp soft and elastic; it did not scrape or spring forward from the cut section. The trabeculae were much increased, both in size and in number. The malpighian bodies were not visible. The splenic veins and artery at the hilum were much thickened and calcareous.

Microscopic Examination.—There was brown degeneration, chronic congestion and slight fatty infiltration of the heart muscle. The liver showed no cirrhosis. There was a moderate grade of chronic parenchymatous nephritis. The other organs showed nothing of significance.

The capsule of the spleen showed thickening and hyaline degeneration. The predominant aspect was that of a profound fibrosis. The organ appeared like a huge angioma, the splenic veins being round or spindle-shaped and were surrounded by dense masses of splenic pulp which had undergone almost complete fibrous change. Much of this new fibrous tissue was hyaline in character. The pulp contained comparatively few cells. These were mostly of the lymphoid and plasma type, with a few large endothelial cells. The endothelium of the splenic veins was not swollen. The malpighian bodies were almost completely absent; here and there was a small group of irregularly arranged lymphoid cells which represented the remains of the malpighian bodies. The trabeculae were enormously increased in size, and their containing vessel showed thickening of the walls with hyaline degeneration. The infarcts showed an almost complete transformation into hyaline connective tissue; nearly all contained lime and some contained bone. There was no blood pigment in the spleen.

The splenic vessels at the hilum showed a connective tissue infiltration so profound that little muscular tissue was left in the walls, and the normal structure was almost completely obliterated. This new connective tissue also showed hyaline degeneration. There was much deposition of lime in the outer coats of the vessels. Sections of spleen and vessels stained by the Levaditi method showed no spirochetes. The lymphatic glands were normal.

COMMENT

Reviewing the clinical features of these two cases we find the following:

The first case was that of a man, aged 60, who had been suffering for one year from a rather profound anemia which progressively increased. During his stay in the hospital, there had been a pronounced splenomegaly, a moderate ascites, and, as the necropsy revealed, a healed tuberculosis of both lungs. In addition the patient had presented a blood condition corresponding to that of a secondary anemia. Despite the short history and an absence of a relative lymphocytosis, the diagnosis of "Banti's disease," had seemed the only one possible and had accordingly been made.

The second case was that of a woman, aged 46, who had been ill for twelve years, and had given a history of hemorrhages from the mouth and bowels. Very significant had been the history of twelve miscarriages. There had been splenomegaly, a secondary anemia, and an enormous ascites which required tapping. The Wassermann reaction had been negative. In this case all the evidence, both clinical and physical, had seemed typical of Banti's disease.

Reviewing the pathologic findings in these two cases we find many things in common: (1) an enormous splenomegaly, each spleen weighing well over 1,000 gm.; (2) a diffuse fibrosis with persistence of the splenic veins and a consequent diminution in cellular content of splenic pulp; (3) a much thickened and partly adherent capsule; (4) a notable diminution in size and number of malpighian follicles, a change in many instances due to progressive fibrosis proceeding from the central artery; (5) a pronounced endophlebitis of the veins in the hilum of the spleen, where there are, in addition, calcareous plaques; (6) thickening and hyaline degeneration of many of the vessels in the trabeculae; (7) absence of general glandular enlargements; and (8) the liver free from cirrhosis.

DEFINITION OF TERMS "SPLENIC ANEMIA" AND "BANTI'S DISEASE"

In accordance with these clinical and pathologic data, what generic pathologic diagnosis is justified? In other words, do the pathologic findings bear out the clinical diagnosis?

In order to answer this question, a brief discussion of certain forms of the nonleukemic splenomegalies is necessary.

In 1866, Gretsel[1] defined a syndrome which Griesinger termed "splenic anemia." The essential features of this disease are (1) primary cryptogenetic splenomegaly; (2) secondary anemia, and (3) chronicity.

In 1894, Banti[2] believed that he isolated a syndrome and pathologic complex from this broad clinical entity. According to Banti this disease has clinically three stages: (1) a period lasting from three to five, but occasionally even twelve years, characterized by a splenomegaly of practically constant size, and an anemia; (2) a short second period characterized by swelling of the liver with diminution of the quantity of urine, and (3) a final period which lasts one or two years, and is characterized by a small liver and ascites. The symptoms in this stage, according to Banti, are identical with those of an ordinary atrophic cirrhosis. The disease invariably ends in death from hemorrhage, or autointoxication from the cirrhosis. The disease is without known etiology. The most common causes of splenomegaly, such as alcohol, malaria and syphilis, play no rôle whatever.

In addition to the symptoms enumerated above, Banti's disease is characterized by hemorrhages from the mouth and the bowel, an icteric skin hue (but no true icterus), and a secondary anemia distinguished by a subnormal leukocyte count with a relative lymphocytosis.

Pathologically, Banti[3] now maintains what he did not assume in his earlier papers, namely, that the disease has a distinct pathology. These manifestations are the following: 1. In the spleen there is a fibrosis of the reticulum, with narrowing of the splenic veins and a thickening of the capsule and of the coarser and finer trabeculae. 2. The main characteristic of the lesion is a fibrosis of many of the malpighian follicles beginning around the central artery of the follicle and proceeding outward. The artery often shows hyaline degeneration. These changes he termed "fibroadenie," because, despite the increase in connective tissue content, the histologic structure of the spleen still retained its glandular appearance. According to Banti, the connective tissue is not of inflammatory origin, because he has never seen anything resembling fibroblastic granulation tissue in these spleens. There is no blood destruction as evidenced by the absence of blood pigments. 3. A cirrhosis of the liver is present differing in no way from that of the Laennec type. 4. In many cases there is an endophlebitis and often a calcification of the splenic veins, extending sometimes to the junction with the portal vein, and even within the portal vein itself. 5. The characteristic red marrow of a secondary anemia is found. 6. Freedom from general grandular enlargement is noted.

In explaining the pathogenesis of the disease, Banti believed that there is a primary splenomegaly due very probably to an infectious agent. The enlargement of the organ produced in turn another toxin which caused a secondary cirrhosis of the liver and the changes in the splenic veins. The anemia is the result partly of the toxemia and partly of the hemorrhages.

Banti's reasons for believing that the splenomegaly is primary are the following: (1) the large size of the spleen at a time when the anemia is not marked; (2) the microscopic lesion seeming to show that the "fibroadenie" antedates the cirrhosis of the liver; (3) the spleen in Banti's disease showing no evidence of *stauung*, a feature characteristic of the spleen in hepatic cirrhosis, and (4) the cures obtained by splenectomy.

In analyzing the clinical and pathologic features of the disease called by his name, we find that Banti has hedged his malady about by so many criteria that it is almost unreasonable to expect any single case to conform to every requirement.

These requirements are clinical and pathologic, and may be classified as follows: 1. The disease must be without known etiology. As soon as a definite cause for the malady is established, the case is no longer regarded as a possible "Banti," but is at once thrown out of court. 2. The blood picture must be typical. 3. There must be three stages, two of which are fairly well defined clinically. 4. The signs of anemia and splenomegaly must precede the cirrhosis.

Pathologically the data which make a diagnosis of Banti's disease possible are the following: (1) a splenomegaly of considerable size; (2) a cirrhosis in the liver of the Laennec type; (3) a histologic fibrosis of the spleen arising without the interposition of fibroblasts; (4) a progressive eccentric fibrosis of the malpighian follicles, and (5) a usual but not constant endophlebitis of the splenic vein.

Banti admits that there is nothing pathognomonic in the pathologic findings. It seems, therefore, that the diagnosis of Banti's disease must be made by a combination of both clinical and pathologic data. In other words, no matter how clear the clinical diagnosis of Banti's disease may be, unless the pathologic findings are those premised by Banti, the disease is not Banti's disease. On the other hand, even if the characteristic pathologic findings are present, unless the history of the case is typical, the diagnosis of Banti's disease must not be made.

1. Gretsel: Berl. klin. Wchnschr., 1866, **111**, 212.
2. Banti: Sperimentale, 1894, **48**, 407.
3. Banti: Folia haemat., I, 1910, **11**, 1.

As a consequence of this dual interpretation, the confusion in regard to the status of Banti's disease as either a clinical or pathologic entity is truly amazing.

Banti has found a few adherents, but by far a greater number of opponents. I have already stated that, as far as I can judge from a study of the literature, his adherents are usually the clinicians, while the pathologists are nearly all his opponents. In this critique of the opposing views, I shall try: (1) to submit the argument pro and con that Banti's disease is a distinct entity; (2) to discuss the relation of this disease to allied morbid states; (3) to discuss certain curious features relating to the pathology of this disease, and (4) to suggest certain problems arising from this study.

ARGUMENTS FOR AND AGAINST BANTI'S DISEASE AS A DISTINCT ENTITY

At the outset we shall admit that the clinical picture described by Banti is sometimes seen. Every clinician with any experience will vouch for this fact. In other words, there are unquestionably patients who, for no obvious cause, show symptoms of long-standing anemia with splenomegaly, and these patients after a lapse of years develop ascites and die. It is also admitted that at necropsy the lesions described by Banti are found.

On the other hand, the literature teems with variations from this general type. These will be discussed seriatim.

1. As to the etiology of Banti's disease, a large number of clinically typical cases have been reported due to syphilis (Marchand,[4] Chiari,[5] Schmidt[6] and Krull[7]). In Schmidt's case, in fact, the disease was cured by salvarsan.

Kartulis[8] reports ten cases of clinically typical Banti's disease, in which plasmodia were found in the spleen. Skubetsky[9] reports a typical Banti's disease (splenomegaly, anemia, ascites and leukopenia) due to tuberculosis of various serous cavities.

Furthermore, there is a host of accurately described and clinically typical cases of Banti's disease in which the symptoms and findings simulated those of a Laennec cirrhosis so closely that the authors believe these two diseases to be identical. I shall discuss this part of the subject more extensively farther on.

Neuberg[10] summarizes his own views by saying that there are many case reports of clinical Banti's disease without known etiology, but with other pathologic findings than those described by Banti; while on the other hand there is an equally large number of case reports in which the characteristic lesions are described, but which have a definitely determined etiology.

2. Is the blood picture characteristic of Banti's disease? I have found the characteristic blood picture in various conditions in which the diagnosis of Banti's disease did not enter. The blood picture appears to be nothing more than the changes associated with any secondary anemia. Hedenius[11] concurs in this view. Banti in his most recent publication admits that the blood picture "is not pathognomonic but only helpful to the diagnosis."

3. Are the stages of the disease described by Banti invariable and is the cirrhosis always secondary to the splenomegaly? In other words, is a cirrhosis of the liver always absent in the first stage of Banti's disease and is it always present in the last stage? If, then, a patient dies with all the symptoms of Banti's disease and at necropsy no cirrhosis is found, must we diagnose Banti's disease in the first stage, or is the case not Banti's disease at all? And if the case is not Banti's disease, in what category may it be placed? The formulation of Banti's disease as occurring in stages has probably caused more of the hopeless confusion in regard to the interpretation of the disease than any other factor.

Numerous cases of clinically typical Banti's disease have been described in which at necropsy no cirrhosis was found. My two reports are cases in point. On the other hand, there is a host of reported cases with the characteristic pathologic changes, but with symptoms so typical of those which Banti described that they were regarded by their observers as cases of true cirrhosis of the liver.

Banti himself is not clear on this point. He admits that patients with clinical Banti's disease may show at necropsy no cirrhosis of the liver. In attempting to place these cases in their proper sphere he suggests a number of possibilities: (*a*) that they represent first stages of Banti's disease, and that in these cases the splenotoxin expended itself in merely creating a fatal anemia and not a cirrhosis of the liver; (*b*) that the lesion may be due to another toxic agent; (*c*) that after all there may be two nosologic entities: a splenomegaly with cirrhosis and a splenomegaly with anemia. Finally, he adds to the confusion by describing the pathologic findings in the first stage of what he himself regarded as genuine cases of Banti's disease. In such cases, he finds no cirrhosis. But the question arises, in view of the foregoing dicta set forth by Banti, How does he know that these cases were in the first stage? For, as I understand him, the diagnosis of Banti's disease is not justified unless cirrhosis is found postmorten.

We thus see from these three points of view, the most important among the clinical phases, that Banti's disease has most indeterminate outlines.

Let me now offer a critique from the pathologic-anatomic aspect.

4. What evidence is there for Banti's contention that a splenotoxin is a secondary cirrhosis of the liver? These are purely hypothetic assumptions, and are based on the fact that clinically the splenomegaly seemed to antedate the onset of the hepatic cirrhosis. The only scientific evidence that such a toxin is developed by the spleen in Banti's disease is the report of Umber,[12] who found in metabolism studies in one case that there was a protein destruction which disappeared after splenectomy. This observation has never been confirmed. Furthermore, the only experiment showing that a splenotoxin may cause changes in the liver is that of Mallory,[13] who, after causing extensive trauma to the spleen, found focal necrosis in the liver. This observation has been cited by various observers as upholding Banti's contention; but, according to my view, the arguments are only too specious. In the first place, dead tissue is not a toxin;

4. Marchand: München. med. Wchnschr., **51**, 463.
5. Chiari: Strassb. med. Ztg., 1910, **7**, 66.
6. Schmidt: München. med. Wchnschr., 1911, **58**, 625.
7. Krull: Mitt. a. d. Grenzgeb. d. Med. u. Chir., 1915, **8**, No. 4.
8. Kartulis: Zentralbl. f. Bakteriol. u. Parasitenk., 1912, **64**, Part 1, Orig. 1.
9. Skubetsky: Wien. klin. Wchnschr., 1912, **62**, 1087.
10. Neuberg: Ztschr. f. klin. Med., 1911-1912, **74**, 92.
11. Hedenius: Ztschr. f. klin. Med., **63**, 306.
12. Umber: Ztschr. f. klin. Med., 1905, **55**, 289.
13. Mallory: Jour. Med. Research, **6**, 264.

and secondly, focal necrosis in the liver is not, nor does it ever bring about a cirrhosis.

Even from the hypothetic standpoint, the pathogenesis as described by Banti is difficult to conceive of. We must remember that Banti wishes us to believe that an extensive fibrosis of the spleen is the result of an unknown toxin, and that, furthermore, this fibrous spleen elaborates another toxin which acts directly on the liver. In the first place, the transference of a sclerosing toxin from one organ to another, has, as far as I can determine, no analogue in pathologic anatomy. If a sclerosing toxin is elaborated within the human body, it affects two or more organs simultaneously. Moreover, it is difficult to comprehend how an organ so extensively fibrous as a spleen in Banti's disease can elaborate a toxin that will in turn have sclerosing properties.

5. Are the histologic characters of the spleen described by Banti pathognomonic? Even Banti admits that these lesions are not pathognomonic of Banti's disease. Fibrosis of the spleen is, of course, found in a host of other conditions; in cirrhosis of the liver, for instance. Even what Banti regards as the most characteristic histologic detail, the eccentric fibrosis of the malpighian follicles, is not pathognomonic of his disease. My cases reveal this lesion, although in the strictest interpretation they are not cases of Banti's disease. The same holds true for the other associated lesions described by Banti.

All in all, it is well agreed by everybody, even by Banti himself, that a pathologic diagnosis of Banti's disease is impossible on the basis of the pathologic findings alone (Simmonds,[14] Neuberg, Marchand, Wentworth,[15] Kaufmann,[16] Hedenius, Borissowa,[17] Schewandin[18] and Naunyn[19]).

6. What evidence is there that the fibrosis of the spleen is a primary sclerosis and is not of inflammatory origin? Banti maintains that the process is a primary sclerosis because he does not see fibroblasts in the spleens of Banti's disease. This argument, to my mind, is weak. In the first place, cells resembling fibroblasts are seen in such spleens. Chiari, indeed, who in some particulars leans to Banti's views, asserts without hesitation that the fibrosis in Banti's disease is identical with the splenic fibrosis of any other origin. In the second place, the distinction between a fibrosis that arises from a so-called "primary sclerosis" and one of "inflammatory origin" is entirely an academic one, and is not countenanced by authorities in pathologic anatomy.

7. What is the evidence in favor of splenectomy as a cure for Banti's disease? In all his publications Banti has been advancing the beneficial results of splenectomy as one of the prime arguments in favor of the primary splenic origin of his disease. This statement, like many others that Banti has made, is much quoted in the literature of this subject.

I feel, however, after analysis of the reported cures, that this statement cannot be accepted without much hesitancy. A study of the reported cases shows either that (1) no proof is offered that the disease described conformed to Banti's specifications, or (2) the "cures" are reported altogether too soon after the operation.

1. Harris and Herzog,[20] who summarized all the reported cures up to 1901, describe unquestionable cases of Gaucher's disease in the number. Wentworth, who also is skeptical of reported cures of Banti's disease by splenectomy, reports a so-called "cure" that proved to be a syphilis of the liver. Marchand reports a similar instance. Naegeli-Nef[21] and Hedenius also believe that many of these reported cures are of maladies other than Banti's disease.

2. The second consideration that arouses scepticism is the fact that the cures are reported too soon after the operation. This is the criticism applicable to the majority of reported "cures." When we consider that even in the third stage a patient may live as long as five years, a cure reported within this time is not of profound significance. In one of the cases that I report, the patient lived for twelve years after the onset of the symptoms.

The most recent summary of splenectomies for Banti's disease that I have been able to find is that of Armstrong,[22] published in 1906. Of the thirty-two reports, only four were made five years after operation. In Banti's latest paper, he collects thirty-six instances with twenty recoveries. He says that two patients operated on in the "first stage" in 1895 and 1904, respectively, and two patients operated on during the "second stage" in 1896 and 1903, respectively, are well. He also makes the cryptic statement that patients operated on in the third stage afford good results. These few cases are all that I can find that in any way sustain splenectomy as a therapeutic measure for Banti's disease. The whole question of splenectomy as a cure for Banti's disease is paralleled, I believe, by our experience with splenectomy as a cure for pernicious anemia. With the first reports, its value seemed to be established; but as soon as sufficient time had elapsed to permit the observation of end-results, it was found that these patients with pernicious anemia succumbed despite the splenectomy, and that the splenectomy produced only a temporary improvement.

RELATION OF BANTI'S DISEASE TO ALLIED MORBID STATES

1. *Cirrhosis of the Liver.*—Banti's disease very closely resembles cirrhosis of the liver, both clinically and pathologically. Indeed, the view that the two conditions are identical is held by many, perhaps even by the majority of Banti's critics (Simmonds, Albu,[23] Gilbert and Lereboullet,[24] Krull, Naegeli-Nef, Naunyn and Wentworth).

Obviously the first argument that would occur to one in order to refute this identity is the different sequence of clinical events. In Banti's disease, a primary splenomegaly is followed by signs of cirrhosis, while in typical Laennec cirrhosis, the reverse is the rule. Nevertheless, I have seen cases of Laennec cirrhosis, and Krull, Naunyn, Wentworth and Marchand report similar experiences, in which splenomegaly is so profound as to mask the symptoms arising from the lesion within the liver.

Pathologically, also, the spleen of a Laennec cirrhosis and that of Banti's disease are in many respects alike. Both are distinguished by splenomegaly, fibrosis and atrophy of the malpighian follicles. In cirrhosis, it is true, the fibrosis is not so profound, and there

14. Simmonds: München. med. Wchnschr., **53**, 772.
15. Wentworth: Boston Med. and Surg. Jour., **145**, 375.
16. Kaufmann: Lehrb. der spez. path. Anat., Ed. 6, 1911.
17. Borissowa: Virchows Arch. f. path. Anat., **172**, 108.
18. Schewandin: Zentralbl. f. Path., **21**, 668.
19. Naunyn: Verhandl. d. deutsch. path. Gesellsch., **8**.
20. Harris and Herzog: Ann. Surg., 1901, **34**, 111.
21. Naegeli-Nef: Cor.-Bl. f. schweiz. Aerzte, 1904, **24**, 280.
22. Armstrong: Brit. Med. Jour., 1906, **2**, 1273.
23. Albu: Deutsch. med. Wchnschr., 1904, **31**, 707.
24. Gilbert and Lereboullet: Rev. de méd., 1904, **24**, 893.

is greater evidence of *Stauung* and hyperplasia of the pulp.

In view, therefore, of the criteria which Banti adduced, a differentiation between Banti's disease and cirrhosis of the liver appears easy. However, when we consider the indefinite outlines, both clinical and pathologic, of Banti's disease, and on the other hand, the very close clinical and pathologic similarity of cirrhosis of the liver and Banti's disease, we can readily understand why so many authors regard the two maladies as identical. A precise differentiation will always be difficult when we must deal, as regards one factor at least, with a purely clinical entity.

2. *Relation of Banti's Disease to Splenic Anemia.*—This relation is a question that has puzzled nearly every one interested in this subject. Nor is it hard to understand the reason, when we consider that the term "splenic anemia" was ascribed by Griessinger to a purely clinical condition. It is thus a term of wide connotation and can be safely applied to any condition in which a splenomegaly of unusual size is associated with an anemia of whatever grade or type.

Since Griessinger's original communication, a number of fairly distinct forms of splenomegaly associated with anemia have been split from this broad group; for instance, the splenomegalies of the Gaucher type, which has a sharply defined pathologic and histologic picture; also the peculiar anemia occurring in children, known as von Jaksch anemia,[25] which has a sharply defined blood picture of its own. And now comes Banti, who also parcels off a portion of this "medical Poland" as his own. And what have we left? According to Banti, only such cases as are fatal and at necropsy show no cirrhosis. Even these cases Banti does not permit to slip out of his hand so easily, because he still feels that they may be cases of Banti's disease in the first stage. If this is admitted, then splenic anemia as an entity disappears completely. On the other hand, Naunyn is willing to call only such cases Banti's disease as are distinguished by splenomegaly without cirrhosis; that is, cases that were formerly termed "splenic anemia"; and Senator[26] says that a Banti disease is only a second stage of a splenic anemia; that is, a combination of splenic anemia and cirrhosis of the liver. The pronouncements of Senator and especially Naunyn are unfair, because Banti should be left to define his disease as he thinks best. If all of Banti's claims are then recognized, we shall arrive at what I regard as the most significant conclusion arising from this study, namely, that Banti's disease and splenic anemia are one and the same thing.

3. *Relation of Banti's Disease to Pseudoleukemia.*—At one time, according to Wentworth, Banti believed that the disease called by his name was the splenic form of pseudoleukemia. But in his most recent paper (1910) Banti does not even mention this name in connection with his disease. This is justified in view of the entirely different histologic characters of the spleen in pseudoleukemia and in Banti's disease.

TO THE PATHOLOGY OF BANTI'S DISEASE

Banti describes a pronounced endophlebitis and often calcification of the portal vein and its tributaries. He believed that this lesion was the result of the action of the splenotoxin on the intima. This lesion has been described many times in connection with this malady, notably by Dock and Warthin,[27] Levastini and Bloch[28] and Bonné.[29] My two cases present this lesion in a profound degree. Furthermore, other observers, Cauchois,[30] Edens,[31] Nonne, MacCallum,[32] Devé,[33] and Oettinger and Fiessinger,[34] report extensive thrombosis in the splenic and portal veins, arising either from an endophlebitis or without known cause, and associated with splenomegaly. The question arises whether Banti is right in his interpretation, or whether the splenic disease may occur as a consequence of the lesion in the vein. Warthin[35] raised this question and instituted experiments consisting in ligation of the splenic veins in dogs. He found that this operation resulted in no increase in the size of the spleen, but rather in an atrophy. Others believe that the splenomegaly is the result of the thrombosis. Cauchois, especially, devotes a lengthy thesis to prove the latter hypothesis, and attempts to make a separate group of cases presenting the Banti syndrome associated with pylothrombosis. His arguments are by no means convincing. This question can therefore safely be left open. The difficulty arises from the fact that sufficient data are not yet available to show whether an endophlebitis with or without calcification occurs unassociated with splenomegaly. In other words, this vein lesion may eventually prove to be entirely an incidental one, and not either a cause or an effect.

On the other hand, it is easily conceivable, indeed, very probable, that the endophlebitis of the splenic vein may cause an ascites in cases that present no cirrhosis of the liver. This may account for the many cases of clinical Banti's disease in which no cirrhosis is found post mortem. This is what probably occurred in my two cases.

SIMULATION OF BANTI'S DISEASE BY PERSISTENCE OF THE UMBILICAL VEIN

These cases are to my mind of much significance as pointing to a possible clue to the origin of many forms of splenomegaly, inclusive of that associated with the name of Banti. Four such cases have been described in comparatively recent times by Cruveilhier,[36] Baumgarten,[37] Masura[38] and Benque.[39] The clinical picture in all was that of Banti's disease. In addition there was hypoplasia of the liver, which these observers agreed was probably a result of the persistence of the umbilical vein. At necropsy, this vein was found enormously dilated, and communicated in some cases with the deep hypogastric or the deep epigastric vein. The excessive amount of blood which this vein carried into the portal sinus overtaxed its capacity and caused a stasis in the splenic vein. In this manner, the authors accounted for the enormous splenomegaly.

These cases seem to me to indicate the possibility that the splenomegaly of some cases of Banti's disease may be of primary vascular origin after all.

25. Some question has recently been raised as to the validity of this form of anemia as a distinct type. Some observers hold that it is only a form of secondary anemia with a profound blood reaction, owing to the heightened susceptibility of the bone marrow in children.
26. Senator: Berl. klin. Wchnschr., 1901, **38**, 1145.
27. Dock and Warthin: Tr. Assn. Am. Phys., **18**, 522.
28. Levastini and Bloch: Bull. Soc. anat. de Paris, **79**, 352.
29. Bonné: Inaug. Diss., Göttingen, 1884.
30. Cauchois: Paris thèses, 1908.
31. Edens: Mitt. a. d. Grenzgeb. d. Med. u. Chir., **18**, 59.
32. MacCallum: Pathological Anatomy, 1916.
33. Devé: Normandie med., March 1, 1908.
34. Oettinger and Fiessinger, Rev. med., 1907.
35. Warthin: Proc. Soc. Exper. Biol. and Med., **4**, 127.
36. Cruveilhier: Anat. pathol. du corps humain, **16**, 6.
37. Baumgarten: Arb. a. d. Gebiete der path. Anat. u. Bakter., 1908, **7**.
38. Masura: Med. Klin., 1911, **8**, 103.
39. Benque: Wien. klin. Wchnschr., **25**, 1240.

THE AUTHOR'S CONCEPTION OF BANTI'S DISEASE

I would deem this communication futile were its theme one of destructive criticism only. My critique, thus far, transports one, as far as the subject of primary splenomegaly with anemia is concerned, practically to the period antedating Banti's publications; not entirely, however. We give credit to Banti for stimulating investigation of an obscure malady, for elucidating much of the pathology of the condition, and for elaborating the clinical phenomena. What substitute, then, can be offered for Banti's conception, and where can the disease that he describes be correctly placed in nosology?

My study and reflection lead me to the following views:

1. All the evidence thus far submitted gives us no right to believe that splenic anemia and Banti's disease are not identical.

2. There is no reason for differentiating Banti's disease from other splenomegalies associated with anemia on the ground that in Banti's disease no etiology can be determined. A nosologic distinction based on whether a disease has a known or unknown etiology has no *raison d'être* in clinical medicine. Rather, I believe, we should regard Banti's disease as merely a nosologic and clinical entity which may be due to both known and unknown causes. The known causes are syphilis, alcohol, malaria, trypanosomiasis, persistence of umbilical vein, etc. In all these maladies, a splenomegaly, an indurative splenitis, with eventual atrophy of the malpighian follicles, and an anemia are the predominant features.

It may be argued that in the splenomegalies associated with alcohol, malaria, syphilis, etc., the causes of the disease and some of the clinical phenomena differ from those which Banti described. In reply, I answer: 1. Banti's disease has no typical course and diagnostic symptoms; indeed, if the specifications which Banti predicated are strictly adhered to as criteria for making a diagnosis, we would find that Banti's disease is extraordinarily rare. 2. A clinical diagnosis of Banti's disease has been made by most able clinicians in cases that eventually prove to be cirrhosis of the liver, malaria, syphilitic splenomegaly, etc. I have cited such instances in this communication. Again, it may be argued that the pathology of Banti's disease is quite different from that of the splenomegalies of known origin. But, as I have already pointed out, the pathology of Banti's disease is by no means a specific one. The fact that many observers hold that Banti's disease and cirrhosis of the liver are identical shows that this contention is not unjustified. 3. I believe that Banti's explanation of the cirrhosis of the liver as secondary to the splenotoxin is wrong. The reasons for this belief I have already discussed. Furthermore, I do not believe that patients who show at necropsy no cirrhosis of the liver should, as some hold, be regarded as affected with a different malady, or that such cases should be regarded, as does Banti, as instances of Banti's disease in the first stage.

I believe it is more logical and would simplify matters considerably to regard these variations as phenomena of one and the same disease; that a fibrogenetic toxin, probably of intestinal origin, attacks the organs draining the portal area, causing primarily a fibrosis of the spleen; and, if the toxin is sufficiently intense or the patient lives a sufficiently long time, causing a cirrhosis of the liver as well. I believe that the common association of sclerotic vascular changes in the mesenteric vessels in Banti's disease are most readily explainable on the same grounds.

Finally, in view of the fact that Banti has failed to make out a case for the disease called by his name and has not shown it to be a distinct entity, the term "Banti complex" should be substituted for the term "Banti's disease" in clinical medicine.

41 West Eighty-Third Street.

THE FRAMINGHAM HEALTH AND TUBERCULOSIS DEMONSTRATION *

D. B. ARMSTRONG, M.D., M.A., M.S.

Assistant Secretary, National Association for the Study and Prevention of Tuberculosis; Executive Officer, Framingham Community Health and Tuberculosis Demonstration

FRAMINGHAM, MASS.

As announced in the papers and elsewhere, the Framingham Community Health and Tuberculosis Demonstration is being conducted under the supervision of a committee organized by the National Association for the Study and Prevention of Tuberculosis. On this committee[1] are represented the National Tuberculosis Association, the Massachusetts State Department of Health, the United States Public Health Service, private antituberculosis organizations in Massachusetts, Connecticut, New York and Pennsylvania, and the Metropolitan Life Insurance Company, the donors of the $100,000 to be devoted to the work.

The selection of Framingham was made after several months' study of numerous communities of similar size in various parts of the United States, but particularly in Massachusetts and New York State. Framingham recommended itself to the committee because it possessed certain average qualities, being an industrial community, with mixed industries, varied racial groups, a good local health organization, backed up by an excellent state department of health, a normal amount of disease, particularly tuberculosis, well trained physicians and good hospitals, and sufficient promise of cooperation from medical, industrial, commercial and social organizations to give reasonable assurances of success.

Is it possible to discover and to place under adequate medical, nursing and relief supervision all of the cases of tuberculosis, incipient and advanced, in a normal industrial community?

Is it possible to ascertain, with some degree of definiteness, the responsible social and economic factors in disease causation, including all types of morbidity, not only tuberculosis?

What is the most efficient utilization of the existing means available for the discovery and treatment of disease? What percentage of theoretically preventable disease is practically preventable with the use of known but unused, or at least uncoordinated, instruments? What is the best possible adjustment of social

* Read before the Section on Preventive Medicine and Public Health at the Sixty-Eighth Annual Session of the American Medical Association, New York, June, 1917.

1. The committee in charge of the work is as follows: Dr. Edward R. Baldwin, chairman; Dr. Charles J. Hatfield, secretary, and Dr. Lee K. Frankel, Mr. Homer Folks, Dr. Arthur K. Stone, Dr. Eugene R. Kelley, Dr. Steven J. Maher, Dr. William Charles White, Mr. Henry S. Dennison, Dr. Victor Safford, Dr. F. C. Smith, and Dr. Charles L. Minor.

forces, existing or to be created, with the objects of the prevention of unnecessary disease and death?

Such, in brief, are the fairly ambitious questions which Framingham is attempting to solve. If the community is the logical social unit for disease prevention and control, and if the time is right for the application of a complete program for disease prevention and health creation, there is every reason to hope that, in some degree at least, answers to the foregoing questions may be demonstrated. Obviously, the problem is not only one of tuberculosis and not only a health problem. Fundamentally it is a problem of social and economic organization.

As indicated above, the objects of the investigation are to demonstrate what may be possible with united community action in the problem of prevention and control of tuberculosis. Inevitably, the experiment, if it goes forward as planned, will broaden out into a general health demonstration concerning itself with the various disease-prevention problems, as they affect the several age groups, and utilizing in its effort at control all potential agencies — social, industrial, educational, medical, etc.

Briefly stated, the essentials of the demonstration, as viewed by the committee, are as follows:

1. The sympathetic cooperation of all individuals and organizations, public and private, in Framingham.

2. The execution of the program on an educational, persuasive and democratic basis, social machinery being devised to carry the various elements in the community organization along with the work as it progresses.

3. The utilization of expert advisory service whenever feasible. This principle applies, of course, to general sanitary, medical, nursing, educational, school or industrial problems.

In order to present before this audience the important phases of the program within the time allowed for this discussion, special attention must be paid to the medical and health aspects of the plan, and consequently only the briefest mention can be made of other significant steps.

It will be realized by any one who has given thought to the problems of preventive medicine that the phase of a complete community program present certain theoretically clear and distinct aspects. There is, in the first place, the preparation of the community for active participation in and full understanding of the work as it is carried out. Along with this go certain activities that may be considered diagnostic in character; that is to say, there must be first a carefully designed effort to make a diagnosis of the community's vital health needs.

These diagnostic activities are further subdivided, and fall under two heads: (1) those which are concerned with the physical conditions under which the people work and live, namely, the environment; and (2) those which apply particularly to the individuals themselves.

The final step is that of community treatment, involving the application of the diagnostic findings and the following out of the therapeutic indications on a community scale. For the sake of clarity as well as brevity, I will take up in a somewhat artificial chronological order the phases of the Framingham program as they have been developed or are foreshadowed in the health demonstration.

Time will allow for little more than an itemization of these steps. Their presentation in this order is, as stated above, entirely artificial, in view of the fact that numerous activities in all phases of the work have to be initiated and urged forward simultaneously.

A. PREPARATORY STEPS

As stated previously, it is felt by the committee in charge of this work that the whole project, if it is to be of permanent value, must be carried out on a democratic educational basis. For that reason, a great deal of attention has been given to certain fundamental preliminary measures, such as the following:

1. The acquainting of the people of Framingham with the motives, methods and practical objects of the demonstration. Special literature has been distributed, almost daily articles have been supplied to the press, and numerous meetings have been addressed on all sorts of occasions, etc.

2. An intimate and elastic local committee organization. This has involved the selection of a local executive committee (of thirteen members), a local advisory council, with numerous subcommittees, a committee on infant welfare, a committee on industry, etc. In addition, and most important, plans are being made for the early organization of small informal neighborhood committees, selected on a block basis, representative of the leading personalities in the community, to serve as a direct channel of interchange between the health demonstration office and the homes of the people.

3. The encouragement of the town to meet its own obligations, and to place the nonexperimental phases of the work on a basis of permanence. This work has already resulted in the handing over to the Community Health Station of two old school buildings for possible use in the treatment of tuberculous patients, or the so-called pretuberculous children, the laying of definite plans on the part of the local hospital to meet the outpatient clinical needs of the community, the establishment of permanent, full-time medical and nursing service for the schoolchildren, the establishment of supervising nursing service by the board of health, the establishment of full-time medical and nursing service for at least half of the industrial population, provision of a full-time secretary with plans for nursing and relief service under the auspices of a local civic league, etc.

4. The organization of a local medical club. The importance of this organization cannot be overestimated, serving as it does as a channel for reaching collectively the medical men in the community. It is an instrument by which their understanding of the program may be facilitated, and the universal adoption of certain diagnostic and treatment standards encouraged.

5. The determination of tuberculosis standards. This preliminary work has been carried out by a committee of specialists from Boston and elsewhere. There have been worked out, for presentation to and use by the local medical men in Framingham, standards for the diagnosis of incipient tuberculous disease, for the diagnosis of tuberculosis among children, for the classification of recognized tuberculosis, for treatment of tuberculosis in its several stages, etc.

B. COMMUNITY DIAGNOSTIC STEPS

As stated previously, the measures aimed at the evaluation of the community's needs fall under two groups.

The first concerns *the environment*. A study of the community's disease hazards has now been completed

in Framingham. This study has touched in the main the following realms of human contact:

1. An analysis of the community's statistical background. This has involved a study of death, birth and sickness statistics for the past ten years, a careful determination for different geographic and racial sections in the community of infant mortality rates, a check-up on birth registration, an effort to correct the tuberculosis death rate during the past year, etc.

2. A study of rural sanitation. One of the reasons Framingham was selected was that it presented in part of the community a distinct rural problem. The rural study covered, therefore, the hazards of rural life, involving an analysis of stable, privy, food, drinking water, housing, and other factors.

3. A study of milk production and handling, a study of food sanitation in all kinds of food shops, etc.

4. A study of general sanitary conditions in the community at large, including a privy and well census, a survey of fly and mosquito breeding conditions, and other allied problems.

5. A very careful survey of hygienic conditions in the schools, including the problems of general sanitation, cleanliness facilities, illumination, ventilation, heating, seating, etc.

6. A thorough analysis of hazards in industry, including ventilation, illumination, dust, fumes, machine guarding and facilities for cleanliness.

All of these sanitary studies have been carried out under the direction of Mr. Franz Schneider, Jr., the sanitarian for the Russell Sage Foundation, and in this work he has had the cooperation and assistance of many agencies, including the Massachusetts State Department of Health, the Massachusetts State Board of Labor and Industries, the Museum of Safety, the New York State Commission on Ventilation, and the United States Public Health Service, all of which agencies have assigned men and instruments from time to time to assist in the completion of the survey program.

The second great division of the community diagnostic problem concerns *the people* themselves. Mention has been made previously of the measures taken to ascertain the hazards of life and work in Framingham. This work has been supplemented by several distinct efforts to ascertain what actual conditions prevail among the people of Framingham, including not only factors of medical and hygienic importance, but certain indirect, yet fundamental factors, social and economic in character. A brief mention of the chief measures follows:

1. A study of infant and child life in Framingham, including particularly the preschool group. In this work we have had the cooperation of the *Delineator* magazine in its infant welfare campaign. This has made possible the visiting of every home in Framingham in which a birth was recorded during the last year, with the enumeration of certain essential prenatal, obstetric and postnatal facts. This work, coupled with an aggressive baby week campaign, has resulted in the establishment of infant clinics, on a permanent basis, involving the cooperation of the local physicians, assisted by expert consultants in difficult cases of infant morbidity.

2. A tuberculin survey of children from 1 to 7 years of age.

3. A study of physical conditions among the schoolchildren, as a part of the community's plan for full-time medical and nursing supervision of the school population.

4. A survey of social and economic conditions in Framingham, bringing out facts regarding home hygiene, income and rent, etc. This work was done in cooperation with the Massachusetts Committee on Safety, and was in reality a part of a patriotic census of resources, taken by 200 volunteer enumerators. For the most part, these enumerators were selected from their own districts, and form the nucleus for future community social organization, making possible a perpetual check on changing economic and social conditions.

5. A health or sickness canvass of rural as well as urban parts of Framingham. This work was done by nurses secured from the local hospital, as well as from cooperating Boston organizations, such as the Boston District Nursing Association. In part, also, several large insurance companies represented in Framingham, such as the Metropolitan, the John Hancock and the Prudential, aided materially in the collection of data regarding recognized and admitted illness.

Fortunately, this sickness census included those families which were later given thorough medical examinations, thereby making possible for the first time a direct comparison between sickness census findings and genuine medical examination results. In this sickness census work about 2,000 families, representing all types and conditions of people in Framingham, were covered.

6. A medical examination campaign. In this work, the most important and radical step taken thus far, about 1,000 families were first visited by nurses and insurance agents, in order to take a sickness census, and to make arrangements for medical examinations. Histories were then taken of those individuals willing to be examined, subsequent to which the people themselves, men, women and children, were given a thorough medical examination in the homes. This work involved the employment of seventy-two physicians from out of town, specially trained in tuberculosis work. It also took the full time of twenty-five nurses and eighteen laboratory workers to cover the field in one week's time.

In all, 2,400 histories were taken, 2,000 people examined, and 1,400 urinalyses made. The people examined were reasonably well distributed as to age, sex, nationality, economic condition and geographic distribution, the results being therefore representative not only of Framingham as a whole, but of any other typical American industrial community.

The final analysis of the results of this medical work is still under way, and for that reason it would be impossible, even if time permitted, to discuss the results more fully at this time. It is believed, however, that an unexpectedly large amount of suspicious and positive tuberculosis has been discovered, involving a follow-up nursing and medical program of major importance.

The committee is convinced also that the results of the work, on the general medical as well as on the tuberculosis side, will serve as a very effective instrument for the promotion of routine thorough medical examinations of supposedly healthy people.

Fortunately, the medical examinations have now become more or less endemic in Framingham, and are being carried out not only by community health station

representatives, but also by local physicians. The local men are calling in expert consultants when needed, are using standard history and examination record forms, and are charging a standard price for health examinations on an individual or, preferably, on a family basis.

C. COMMUNITY TREATMENT

The foregoing measures indicate for the most part the progress to date of the Framingham Community Health and Tuberculosis Demonstration. It remains now briefly to point out what seem to the committee to be the follow-up steps, the community treatment measures, as indicated by the preliminary findings.

Obviously, there is still much to be done on the diagnostic side. A careful analysis of results thus far will indicate further measures of significance, if we are to derive from this demonstration an exact knowledge of the factors that are of importance in the production and perpetuation of tuberculosis in a normal American community.

Medical findings must be correlated with social and economic conditions. Light must be thrown, if possible, on the relative importance of infection on the one hand, and hereditary resistance on the other. Only an intensive scrutiny of the progress of the work as carried out along accepted, routine lines will indicate probable loopholes in the community's defense against disease, and probable additional measures for filling the gaps hitherto undemonstrated.

The major treatment activities immediately contemplated are as follows:

1. The correction of environmental conditions. The Community Health Station feels assured of the cooperation of local official and private agencies in the application of the findings of the sanitary study, in schools, factories, etc., or in the community at large.

2. Education and publicity. The Community Health Station will make every effort to popularize those findings which require public support for their effective application. A program of education is under construction which will reach all interests in the community, which will use not only special occasions, but also routine educational channels, such as the schools, the churches, the clubs and the factories. This work ought to lay the basis for future hygienic practices in the homes, schools, factories and workshops. It ought also to result in bringing under continuous and competent medical supervision the major part of the entire population as a result of the popularization of the medical examination finding, etc.

3. The continued encouragement of the community to meet its own obligations. This applies not only to the public requirements, such as school medical inspection, public health nursing, etc., as mentioned in an earlier part of the paper, but also such measures as medical factory inspection, improvement in dairy conditions, etc.

4. The use of the local medical organization to bring about a higher degree of efficiency and standardization in local medical diagnosis and therapeutics. An expert consultation system is being worked out. With the cooperation of the public health service, the physicians are being asked to report all types of morbidity. Standard methods for diagnosis and treatment for tuberculous cases are being advocated. Lectures and clinics bearing particularly on the detection of incipient disease are being planned under the auspices of the local medical club and the Extension Department of the Harvard Medical School, etc.

5. The coordination of nursing activities. The nursing agencies in the community, including the District Nursing Association, the local hospital training school nurses, the Civic League relief and infant welfare nurse, the school nurse, the factory nurses, and the board of health, public health and tuberculosis nurse, are also being coordinated into a nursing unit, with adequate expert supervision, emphasizing the principle of generalized rather than specialized nursing. In this work, the board of health nurse will act as the central agent, supervising the work of the other agencies on a basis of mutual understanding and cooperation.

6. Provision for outpatient medical service. The local hospital has plans for setting aside a part of its equipment sufficient to provide outpatient medical, minor surgical, infant welfare, nose and throat, eye refraction, and dental services. This work will be developed in cooperation with the local medical club, assisted by expert consultation service when necessary, and will be placed so far as possible on a self-supporting, pay, medical compensation basis. It will provide medical and health center facilities, not only for the community at large, but also for the diagnostic end of the medical services in schools and factories in the community.

7. The careful follow-up of the results of the medical examination and infant consultation campaigns, arranging for treatment by the local physicians. This follow-up work will involve certain problems not directly related to the special tuberculosis interests of the community. The groups of citizens' reports as a result of the medical examination work will be as follows:

(*a*) Normal individuals.

(*b*) Individuals with slight affections, to be referred by correspondence to their physicians for treatment.

(*c*) Individuals with nontuberculous, serious affections, to be referred by correspondence and by visiting nurses to their physicians for treatment.

(*d*) Venereal cases to be handled confidentially with the local physicians.

(*e*) Glandular cases in children, possibly tuberculous, to be reached by special nursing and educational follow up.

(*f*) Tuberculosis cases, positive or suspicious, on which the follow-up energies of the Community Health Station will be specially concentrated. This will involve nursing visits, subsequent reexaminations, treatment by local physicians, or through other channels on an expert consultation basis, final classification as to diagnosis, and continuous follow-up educational activity.

8. The use of all available treatment facilities for tuberculosis cases. This in brief involves the utilization of at least the following channels:

(*a*) Home treatment, with the aid of the local physicians, in the great majority of cases. In Framingham it will probably be possible to find the diseased individuals in the early stages of the infection, when moderate modifications in diet, personal hygiene, work, etc., will constitute adequate measures against the development of the disease. In these cases, of course, special educational and perhaps medical mea-

sures will have to be taken to prevent the spread of infection, particularly to infants and children.

(*b*) The establishment of summer camps or perhaps a preventorium for delicate children, with or without suspicious glandular development, previously known to have been exposed to the disease. For this purpose it may be possible to utilize one of the old school buildings in Framingham, held over by the town administration for this use.

(*c*) The establishment of at least a temporary and possibly a permanent local institution or clearing house for advanced cases among males and females, adults and children. This will be useful for patients on state institution waiting lists, for patients who do not desire to leave the community, or for patients whose presence at home will involve the hazardous exposure of other members of the family. Such an institution can be organized in Framingham as a distant ward of the local hospital, thereby saving considerable overhead expense in nursing and other charges.

(*d*) The local hospital has placed at the disposal of the Community Health Station a sun room for the treatment of surgical cases of the disease.

(*e*) Wherever possible, established treatment facilities for advanced cases, or for incipient cases likely to be improved by out of town treatment, will be used. This includes the four Massachusetts state institutions, several neighboring private hospitals, a large county hospital now under construction, etc.

9. Continued hygienic education. This, of course, is an ever present need in any community, and will be carried out continuously through all regular and special channels, reaching school, factory and other groups. This public health educational work will for the most part be under the permanent supervision of an established local organization, namely, the Civic League. An effort will be made to bring under this organization all private agencies interested in health or preventive medical work, thereby coordinating and centralizing efforts along these lines.

10. The coordination and permanence of local health and relief activities. As stated in the beginning, one of the essentials of the program is to have perpetuated on a permanent basis those activities which are demonstrated to be of continuous value to the community.

There exist in Framingham two agencies for this work: (1) the board of health, which, with the assistance of the other official branches of the town government, is being encouraged to meet the normal community needs along public lines, and (2) the local Civic League, which organization is equipping itself to carry on health educational work, to promote domestic science and home economic education in cooperation with the local public and normal schools, to coordinate and carry out on a satisfactory basis whatever relief work is necessary in the community, and in general to systematize and place on a permanent basis of efficiency those health, educational and charitable activities not recognized by the town itself as official obligations. This coordination of public and private agencies will make a permanent social organization that ought to continue to meet the community's needs along all these lines, subsequent to the experimental stages of the health demonstration. The Civic League will also give attention to recreation facilities.

SUMMARY

The methods and objects of the Framingham Community Health and Tuberculosis Demonstration are so directed as to discover disease, especially tuberculosis, in its incipiency, with the help of the local physicians, through the special examinations that have been and that are being carried on, and through the special work among infants, in schools, in factories, and elsewhere.

Adequate treatment facilities, especially for tuberculosis, will be provided as outlined above, whenever possible, on a basis of permanence, and in such a way as to require the local community to meet its own logical and natural obligations.

Finally, it is hoped that general sanitation, health education, and continuous medical supervision will act as effective instruments in the prevention of unnecessary disease and defect.

Thus far the health demonstration has demonstrated that with sympathetic cooperation from local and outside agencies, the basis for community social control over disease-producing factors can be laid. It is the hope of the committee that further developments of the work will demonstrate that on a community basis disease may be prevented and health created, thereby laying a permanent physical foundation for future social, economic and spiritual evolution.

ABSTRACT OF DISCUSSION

DR. S. ADOLPHUS KNOPF, New York: When one desires to improve the health, vigor and morale of the community, with a view particularly to preventing the development and spread of tuberculosis, one should begin at the beginning; that is to say, with prenatal as well as postnatal care of the infant. Thus, if the mother is a working woman, she should not be allowed to work until the day before her confinement, but should be given prepuerperal care of at least two to three weeks, with instruction how to care for herself and child after birth. Breast feeding should be insisted on whenever possible. Military statistics in foreign countries prove that the breast fed candidates make better recruits than the ones who were artificially fed when babies. Unfortunately, poor working mothers are often deprived of the privilege of nursing their little ones as they should be nursed, because the few moments which can be utilized when the baby is brought to the factory do not suffice to give the child the necessary quantity of food. By and by the baby is fed artificially at home.

It seems to me in a community experiment this underfeeding of infants, particularly among the working classes, should be prevented. This neglect is, of course, equally sinful, if not more so, in the well-to-do classes who find it more convenient to have their children artificially fed. In our kindergartens the little ones often catch colds which ultimately develop into tuberculosis. In the report submitted to us by Dr. Armstrong I did not see any mention made of school luncheons. The underfed schoolchild cannot do as good work as the well fed child.

I am sorry to say that I did not see anything mentioned in the report as to the efforts made to keep the atmosphere as clear as possible. Can the doctor tell me whether they use hard coal or soft coal in Framingham.

DR. D. B. ARMSTRONG, Framingham, Mass.: They probably use some of both.

DR. MAURICE FISHBERG, New York: It is interesting to see that at last, on a small scale, an experiment is being made to determine the real value of the methods we have been applying for twenty or thirty years and how far they have been effective in eradicating tuberculosis. Although we are now spending over $20,000,000 annually on the prophylaxis of tuberculosis, we have no exact data on which to base any method which will surely be effective. One physician tells us that everything seems all right excepting that in the inquiry the number of infants that are artificially fed should be ascertained. There is no doubt that breast feeding prevents many diseases of infancy; but 99 per cent. of my hos-

pital patients have been breast fed, yet now they are tuberculous. We are also told that no success can be expected at Framingham unless the use of soft coal is prohibited. To be sure, smoke is a nuisance, but it does not cause tuberculosis. In Pittsburgh the tuberculosis mortality is very low and coal miners are almost immune to this disease. The work at Framingham will therefore have to be along different lines.

Too much cannot be expected in an experiment of three to five years. Tuberculous disease is not synchronous with infection, excepting during infancy. Infants, when exposed, are infected, become sick and die within a comparatively short time. But adults become sick with tuberculosis as a result of infection dating back to childhood. The adult population of Framingham has undoubtedly been infected with the tubercle bacillus long ago, and whether they will become sick with the disease depends no more on infection, but on other factors. As to what reactivates the dormant processes in the lungs remains to be determined, and the committee at Framingham has an opportunity to give us the information we are now lacking. But prophylaxis of infection should only be attempted in the case of infants.

The question of diagnosis in New York has not yet been solved. The municipal sanatorium is said to have 40 to 60 per cent. of sputum-negative cases. Now, wherever careful investigations have been made it was found that hardly over 10 per cent. of sputum-negative cases, presenting suspicious symptoms and signs of tuberculosis, are really suffering from this disease and in need of prolonged treatment. Over 10 per cent. of patients in hospitals for advanced consumptives have been found nontuberculous at necropsies. I hope that the work at Framingham will be done more by clinicians than by social workers, so that the number of nontuberculous persons treated as sick with tuberculosis will be reduced to a minimum.

I should like to warn you against judging the value of the experiment on the data supplied by the mortality rates. The tuberculosis mortality rates have been declining for over fifty years in all civilized countries; in New York, Philadelphia and Boston, for over one hundred years; while our prophylactic measures have been applied only since the last fifteen or twenty years. To be significant, the drop in the mortality rates will have to be more pronounced, the curve will have to be more steep, than it has been during the past twenty years.

DR. HAVEN EMERSON, New York: I have not the figures at hand as to the percentage of patients sent to the municipal sanatorium at Otisville who are positive sputum cases. The patients are mostly positive bacillus carriers, removed from homes where there are children in the household; and the others are patients who are sick enough to need sanatorium care on their own account, and are really acutely sick patients, whom any physician would wish to have put under bed care: so much so is this the case that we have found it necessary to insist on having an infirmary in which these patients can be cared for, as if in an acute hospital. What Dr. Fishberg says may have been true of the way in which the sanatorium was operated at first, when the conception of it was as a hospital for the treatment of incipient tuberculosis. The sanatorium now is operated with the idea of its being primarily to play a part in the sanitary control of the disease.

Dr. Fishberg's figures may have been based on the previous operation of the sanatorium, but I think that does not give a true impression of the character of the patients we are now admitting.

Improvement in Retarded Children.—It is a well known fact that children who are retarded and far below the average intelligence at an early period may as they grow older catch up a year or two in mental growth. The fact that a child grades below the average by formal tests is not an infallible sign that he will never develop beyond the mental attainments of a child. An analogy is found in the retarded physical development of certain children.—Treadway, *Public Health Report*, Nov. 24, 1916.

CEREBRAL SPASTIC PARALYSIS DUE TO HEMORRHAGE

A FURTHER REPORT OF THE FIRST SIXTY-FIVE CASES OF CRANIAL DECOMPRESSION FOR SELECTED CASES *

WILLIAM SHARPE, M.D.
AND
BENJAMIN P. FARRELL, M.D.
NEW YORK

The patients were carefully selected, and only those with signs of persistent intracranial pressure were chosen, this constituting less than 25 per cent. of those examined. Ophthalmoscopic examination revealed dilated retinal veins and blurring of the optic disks; in the later cases, these findings of increased pressure have been confirmed by the measurement of the cerebrospinal fluid at lumbar puncture by the use of the spinal mercurial manometer. In all of the cases there was a history of prolonged and difficult labor, most of them being instrumental deliveries. A negative Wassermann test of both blood and spinal fluid was obtained in every case except one. No selection was made as to age, spasticity or mental deficiency. Microcephalic children, cases of agenesia (so-called Little's disease), and those due to meningo-encephalitis were naturally excluded as nonoperable, there being no increased intracranial pressure.

The pathologic condition, as found at operation and and post mortem, was noted, a written permission for necrospy having been obtained in each case. A definite fibrous cystic formation was invariably present. This lesion was supracortical in all but four cases, the others being subcortical or cortical. The cysts were punctured and their outer walls removed; fibrous formation was removed except in cases in which its removal would have caused damage to the underlying tissue; in these cases it was left alone.

After-treatment consisted in the correction of deformities by tendon lengthenings, stretching of muscles, tendon transplants, etc., massage, and careful muscle education with special attention toward establishing an improved coordination.

Of the sixty-five patients, nine died after operation, and eight have died in the past two years, making a total of seventeen deaths. We have been unable to obtain any record of four; nineteen show practically no change; twenty-five show improvement more or less marked; the youngest patient was 2½ years of age, and the oldest 17 years.

When epilepsy is a complicating factor, the prognosis is invariably bad; the immediate results were gratifying in that the convulsive seizures were less frequent, but this improvement lasted only for a few months. The younger the child, generally speaking, the more marked has been the improvement. The older the child, the less marked the improvement. In the adult cases there has been practically no improvement. Supracortical lesions are the only favorable cases; in this type damage to the nerve cells is due to pressure alone from the overlying lesion. In the cortical or subcortical lesions, there is, naturally, a definite destruction of brain tissue, and only in those

* The preliminary report of this work appeared in THE JOURNAL, Feb. 6, 1915, p. 482.

* Read before the Section on Orthopedic Surgery at the Sixty-Eighth Annual Session of the American Medical Association, New York, June, 1917.

cells along the edges of the cyst that are suffering from pressure can any improvement be expected.

CONCLUSION

We want to make an appeal for better preventive means in avoiding this most distressing affliction. First of all, we need more care on the part of the obstetrician; careful pelvic measurements should be made as early as possible; prolonged labor should be avoided whenever possible; practitioners should realize that cesarean section is less dangerous to mother and child than is the use of the high forceps; every child should be as carefully inspected during the first few weeks of life for symptoms and signs of intracranial hemorrhage as for deformities. When these symptoms and signs are present, a cranial decompression operation should be performed as early as possible in those selected cases in which the fluid or clotted blood can be removed before any (or but little) permanent damage to the brain tissue has taken place. In this manner we believe that children suffering from this form of spastic paralysis can be reduced in number, and that the most severe cases can be avoided or improved. The essential points to be emphasized are the early diagnosis and early treatment of these selected cases.

ABSTRACT OF DISCUSSION

DR. FRED J. FASSETT, Seattle: We have, in previous times, seen promises given for the relief of such deplorable conditions, and have had good reports from the treatment up to a certain point, and there the matter has apparently dropped. I think that when it has been shown that a remedy that seemed promising at first has later become less promising, there is a tendency to drop the subject on the part of those who have introduced it, thus leaving the rest of us in the air, so to speak, as to the ultimate results. We are asked often what the final outcome was in such cases, and are compelled to answer that we do not know. We in the West have sometimes seen patients who have traveled thousands of miles to be treated in some new way, only to find out that had the later results been published, the trip would have been unnecessary. I wish, therefore, to commend the frankness with which these gentlemen have reported to us this definite conclusion of their work.

DR. WILLIAM SHARPE, New York: Dr. Farrell and I have endeavored in this report to be as conservative and as critical in regard to the results in these first sixty-five cases as one could possibly be. The point we wish to emphasize is that most of these patients over 3 years of age are derelicts, and no marked improvement can be expected in many of them. These extreme cases can be somewhat improved, but the improvement, as you see, in many of them is slight. Indeed, in only twenty-five out of our first sixty-five cases, which were of the most extreme type of the condition, can we say that the operation was justified by the results obtained.

We wish also to emphasize the fact that the cases should be diagnosed early—as soon as possible after birth—by means of careful ophthalmoscopic examinations, a measurement of the pressure of the cerebrospinal fluid at lumbar puncture by means of the spinal mercurial manometer, blood and spinal fluid Wassermann tests, etc. By selecting these patients carefully and operating only on the ones with increased intracranial pressure can we expect to obtain definite results. I have now operated on nine of these infants on the day after birth, with excellent results. Only about one out of every five patients examined has shown signs of increased intracranial pressure, and naturally only these selected patients were operated on.

I wish also to emphasize the importance of getting permission for necropsy in this work. Of the 282 children I have now operated on out of almost 1,400 children examined, we have had permission for necropsy in every case before the operation, and of the twenty-eight children who died we found the intracranial hemorrhage in all but one of them. In the early cases we can get excellent results; but in the wrecks or derelicts of several years' duration, very little can be expected in the way of a marked improvement.

THE IMPORTANCE OF THE LIGAMENTS OF THE ANKLE IN CORRECTION OF CONGENITAL CLUBFOOT *

ISADORE ZADEK, M.D.
AND
E. L. BARNETT, M.D.
NEW YORK

It is generally conceded that the best time to begin treatment in cases of congenital clubfoot is within a few weeks after birth.

The usual procedure is to correct the varus by means of manual force, gradually overcoming the deformity and maintaining by means of plaster of Paris the correction obtained each time. When the

Fig. 1.—After achillotomy; patient aged 5½ years; foot pushed up as far as possible; no change.

varus has been overcome completely, and the foot is overcorrected and in eversion, the equinus is attacked. A similar method is followed here, using plaster of Paris, braces, or adhesive tape, to maintain the amount of correction obtained. This suffices in a large percentage of cases to effect an anatomic restoration of the affected structures of the foot. However, this leaves a large percentage still uncorrected.

It is with the element of equinus that we have been chiefly concerned. Observation of a considerable number of so-called cured congenital clubfeet treated by manipulation shows the varus practically overcome, while the child stands and walks without being able to put his heel squarely on the ground.

A properly cured case of congenital clubfoot treated by one of the usual methods in vogue, employing only manual force, shows at the end of treatment a considerable degree of dorsal flexion of the foot. When the foot goes into dorsal flexion it goes as a whole, so that the plantar surface is in one plane.

* From the clinic of the Hospital for the Ruptured and Crippled.
* Read before the Orthopedic Section of the New York Academy of Medicine, May 18, 1917.

In many cases results are not so fortunate. In these unsucessful cases the foot can be pushed up almost to a right angle with the sole in one plane, but when further correction is attempted we get a sole with a generally rounded contour. This means that the malposition of the os calcis and astragalus has not been rectified. In these cases we have made our correction in the front half of the foot at the mediotarsal and subastragaloid joints, and we have broken up the normal relations of the bones of the foot, producing an "apparently overcorrected-noncorrected equinus." The inevitable result is that this overcorrected part of the foot later drops to a position relatively normal as regards the posterior half of the foot. We then have a so-called "relapsed clubfoot," which term is a misnomer.

At this stage, one finds dorsal flexion of the foot restricted, and the resistant structures show no elasticity and hence no give under steady pressure of extreme force. The obstacle shows so little tendency to yield that one might readily conclude that it was bony.

Fig. 2.—Following achillotomy; same patient; posterior ligaments of ankle were cut subcutaneously; now foot can be pushed into dorsal flexion, and os calcis tilts up to normal degree.

If a roentgenogram of a normal child's foot is taken when in plantar flexion, at a right angle, and in dorsal flexion, it is found that the os calcis and the astragalus increase their upward inclination with this motion in the foot. In the type of clubfoot which we are considering, the os calcis is tilted downward or at right angles to the tibia, and one cannot with extreme force alter this position. The Roentgen ray reveals all of the bones poorly developed. The astragalus shows a more shallow groove for the neck than the normal of the same age.

We frequently hear of subcutaneous section of the astragaloscaphoid ligament, or if one prefers the open method, one may cut the whole internal lateral ligament according to the technic of Ober. Yet in these cases the operator is frequently satisfied with tenotomy of the Achilles tendon as a means of correcting the equinus deformity. This procedure in these cases is ineffectual, and yet we find an achillotomy repeated two, three or more times.

We have followed by means of the Roentgen ray the relative effect of section of the Achilles tendon and the posterior ligaments of the ankle joint, as regards the freedom of dorsal flexion of the foot immediately afterward and the positions assumed by the os calcis (Figs. 1 and 2).

We were unaware of the ease with which the posterior ligaments of the ankle can be cut subcutaneously, and our first case was done under the fluoroscope.

The technic which we have employed has been to use a tenotomy knife with a long shank and small blade with a cutting edge only on one side. The knife is inserted on the inner side of the ankle just at the inner edge of the Achilles tendon, and on a level with the tip of the internal malleolus. The back of the blade is turned inward. After penetrating from a quarter to half an inch, depending on the age of the patient, the blade is turned so as to lift the vessels, nerves, and other structures up on its back, and the blade is pushed deeper. Maintaining this position, the blade is swept outward from the internal malleolus while pushing up on the foot. There is an audible and palpable grating while the sawing motion is in progress. After all the resistant structures have been cut, the tenotome is withdrawn and the foot is pushed up. There is a give and sometimes an audible cracking. Now one finds the os calcis tilted up. We have thus far treated in the manner described twelve clubfeet. We would caution against using this procedure soon after manual correction has been attempted, as the foot broken and weakened at the mediotarsal joint will give at this point, and thus will not allow sufficient leverage to obtain the desired dorsal flexion of the foot as a whole.

CONCLUSIONS

1. One of us, from observation of several hundred cases of congenital clubfoot treated by the usual methods, has noted that practically none of the severe cases shows dorsal flexion to a right angle without breaking the mediotarsal joint. In view of this observation of failure to procure sufficient dorsal flexion to insure stable locomotion, this operation has been devised.

2. From a study of these cases by the Roentgen-ray, we conclude that the only reliable test for the correction of the equinus if there is a rounded sole is a roentgenogram. Many cases which have shown apparent overcorrection, when studied by the Roentgen ray show a break at the mediotarsal joint, with the malposition of the os calcis not rectified. These are the cases which later, never having had the equinus overcorrected, gradually become worse and constitute the early "relapsed clubfeet."

The Fundamentals of Military Efficiency.—Military efficiency in an individual, then, rests upon certain considerations, chief among which are health, strength and activity. To secure and keep these qualities it is essential for every man to form such habits as experience has shown to be necessary. These habits are: personal cleanliness; regulation of diet; avoidance of excesses (particularly in eating, drinking, and sexual matters); wearing suitable clothing; keeping the bodily processes at work (kidneys, bowels, skin); taking sufficient exercise, preferably in the open air; devoting a proper part of each day to rest of body and mind, with recreation for the latter; maintaining the surroundings in which one lives, in a cleanly state.—Keefer, *Military Hygiene.*

A CASE OF EPIDERMOPHYTON INFECTION OF THE SCALP *

RICHARD S. WEISS, M.D.
ST. LOUIS

The recent work of Ormsby and Mitchell[1] has revived interest in the ringworm infections of the skin.

Fig. 1.—Pubic region, showing typical "eczema marginatum."

These observers call our attention to the fact that many cases of dermatitis are caused by these parasites and by one in particular, the *Epidermophyton inguinale* (Sabouraud).

A patient has recently come under observation who shows practically all distributions of epidermophyton

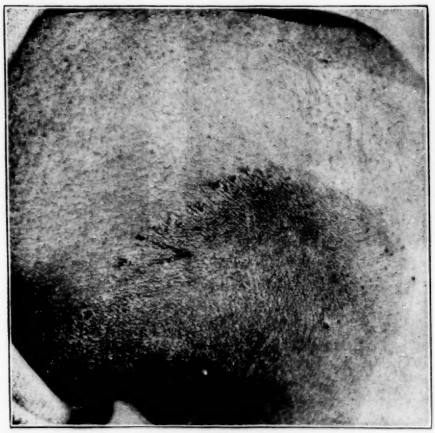


Fig. 2.—The lesion at the side of the left knee.

infection, and in addition shows a new distribution, a large patch of the disease on the scalp. A careful survey of the literature which is available reveals no similar distribution, and I therefore put the case on record.

* From the Department of Dermatology, Washington University Medical School.

1. Ormsby, O. S., and Mitchell, J. H.: Ringworm of Hands and Feet, THE JOURNAL A. M. A., Sept. 2, 1916, p. 711.

REPORT OF CASE

R. K., a man, aged 27, entered the Washington University Dispensary Skin Clinic, Feb. 23, 1917, complaining of "eczema." His family history and past history have no bearing on the case. He denied having had gonorrhea or syphilis. With the exception of a slight enlargement of the thyroid, the physical examination was negative.

The present illness began in November, 1915, as a few little blisters on the bottom of the right foot. It spread slowly upward between the toes and around the nails. Itching was rather severe, and there was weeping and crusting. About five months later, other patches appeared about the genitals and on the arms. These patches did not itch, but they spread rapidly. Recently patches have appeared around the left knee and on the legs. The eruption as a whole has been gradually spreading, and the itching has been getting worse. The hands were involved about a month after the disease began, blisters appearing between the fingers. These would break and a crust would form. These lesions healed spontaneously in about a month. A patch on the back of the scalp was first noticed in March, 1917.

Fig. 3.—The maceration under and between the toes.

The Skin Lesions.—Distributed in various regions, the patient presents patches of characteristic dermatitis.

In the pubic, genitocrural, perineal and anal regions a typical "eczema marginatum" is found. It is of unusually extensive distribution (Fig. 1). The primary lesions are tiny vesicles and scaly papules in a typical ring arrangement, spreading at the border and clearing in the center.

On the middle third, posterior surface of the right arm, a similar patch presents itself. It has the same characteristics and is about 5 inches in diameter.

On the middle third, inner surface of the left thigh, is a similar patch about 4 inches in diameter.

Covering the internal and part of the posterior surface of the left knee another large patch is found. It is about 8 inches in its longest diameter (Fig. 2).

The right foot is also involved (Fig. 3). Beginning at the tarsometatarsal articulations and extending upward on the plantar and inner surfaces of the toes is a vesicular dermatitis with much scaling and maceration. The maceration is an especial feature between and behind the toes. Here the

lesion presents undermined borders and deep maceration, and is typically characteristic of the disease in this location.

The back of the scalp is markedly involved (Fig. 4). The lesion takes the form of a segment of a circle, and is about 6 inches long. The advancing border consists of a ridge of scaly papules. There are no vesicles to be seen. The color is dull red somewhat masked by the hair. There is no alopecia.

The Organism.—Scrapings were made from the edge of most of the lesions, including the scalp, and fungi corresponding in type to the *Epidermophyton inguinale* were demonstrated in potassium hydroxid preparations.

Cultures were made from the edge of the scalp lesion on Sabouraud's medium and on glucose agar. Only *Staphylococcus aureus* grew in the Sabouraud tubes. On the glucose agar, *Staphylococcus aureus* appeared in a few days. About ten days later, small yellowish colonies of fungi made their appearance and slowly grew until in about three weeks they were about one-half inch in diameter (Figs. 5 and 6). The color was a dirty white with a slight tinge of yellow. A week or so later the colonies were covered with fluffy, white tufts. Subcultures were made on glucose agar. The organism reproduced true to type, but the cultures were also contaminated with staphylococcus.

Smears made from the cultures at about the third week showed the same organism observed in the scales from the lesions.

Hairs from the scalp lesion were examined in potassium hydroxid, but no organisms could be found.

Treatment.—The lesions were at first treated with Whitfield's ointment[3] with but little improvement. The patient was then given 3 per cent. pyrogallic acid for the scalp, pubic, crural, perineal and anal regions, and 3 per cent. chrysarobin for the remaining lesions. By May 22, 1917, the lesions had all disappeared.

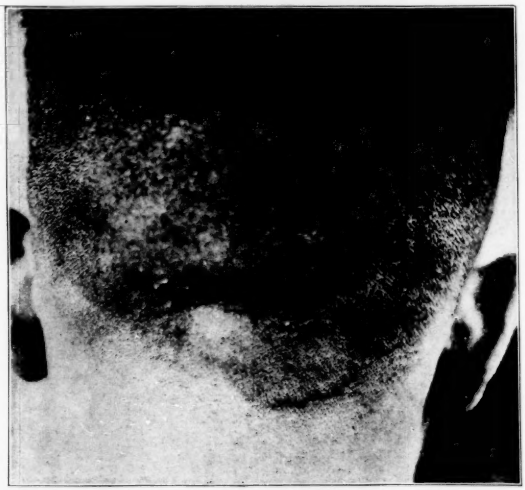


Fig. 4.—The lesion on the scalp.

Fig. 5.—Culture of *Epidermophyton inguinale* from the scalp.

Fig. 6.—Culture of *Epidermiphyton inguinale* from the scalp.

COMMENT

Sabouraud[3] states that "it [the *Epidermophyton inguinale*] does not attack the hair; it requires the bottom of a flexure for its inoculation." The case described shows a lesion on the back of the scalp apparently autoinoculted from the extensive lesions elsewhere on the body. This location is not a flexure (except perhaps in very stout persons, and this patient is slender), so that it is apparent that at times inoculation may occur in places where there is no excess of heat and moisture.

Wall Building.

2. Seven per cent. salicylic acid and 14 per cent. benzoic acid in white petrolatum (Whitfield: Brit. Jour. Dermat., 1911, **23**, 375).
3. Sabouraud: Brit. Jour. Dermat., 1911, **23**, 385.

TREATED AND UNTREATED OSTEOCHONDRITIS JUVENILIS OF THE HIP*

WALLACE BLANCHARD, M.D.
Fellow of the American College of Surgeons
CHICAGO

Perthes' disease, or osteochondritis juvenilis of the hip, results in far more extensive bone atrophy than has been supposed. The bone atrophy and rarefication are so extensive that they have changed our previous conception of the pathology of the disease.

Up to the present time, the only joint and bone changes recognized in Perthes' disease have been a partial or total destruction of the head of the femur with a stumping of the neck, together with a thinning of the femoral shaft. Most authors have agreed with the unsustained suggestion, made by Freiberg[1] at the last session of this Association, that the disease is caused by tonsillitis or some other local infection. Experiments have been made on animals by Allison[2] to determine what influence a slight injury or displace-

* Read before the Section on Orthopedic Surgery at the Sixty-Eighth Annual Session of the American Medical Association, New York, June, 1917.

1. Freiberg, A. H.: The Evolution of Osteochondritis Deformans Coxae Juvenilis, THE JOURNAL A. M. A., Aug. 26, 1916, p. 658.
2. Allison, Nathaniel: Am. Jour. Orthop. Surg., October, 1915.

ment to the epiphysis might have on the hip, and his results were negative.

Since I desired to make a comparative study of diseased and normal hips, I had roentgenograms taken of cases of Perthes' disease, to include all of the pelvis as well as both the femoral shafts on single large plates. In these comprehensive pictures, I soon discovered decreased bone density and some atrophy of the pelvis on the diseased side in the acute cases.

The bone atrophy and lessened density are of about the same degree in the ilium, ischium and pubic bone as in the shaft of the femur. The atrophy of the ischium and pubic bone usually reduces the obturator foramen to one-half the size of the opposite foramen, as is well shown in Figure 4. On examining roentgenograms of both legs in one picture, it soon became apparent that all the bones of the leg suffered moderate atrophic changes. Decreased density is also seen in all the surrounding muscles and other soft parts.

The shrinking of the head of the femur leaves a vacant space in the acetabulum which shows principally adaptive changes.

Atrophy of bones and muscles is one of the first symptoms, and is as equally constant in the functionally used diseased leg as in the unused diseased leg. The atrophy becomes less as the distance increases from the hip.

Early and continued mechanical treatment that protects the head of the femur from weight-bearing, jar and concussion will usually preserve the head in its rounded shape; but observation of a number of treated and untreated cases shows that the best available mechanical treatment has little or no effect in either preventing or causing atrophy of the bones and muscles of the leg of the diseased side.

I have not been able to locate a tonsillar or other source of infection in a single case.

The moderate but extensive atrophy and decreased density of bone and adjacent tissues precludes the possibility of the disease being due to a circumscribed joint infection or an epiphyseal injury. The disease is undoubtedly trophic in character and is probably caused by an extensively disturbed blood circulation that impairs nutrition from a median pelvic line to the foot.

It is unfortunate that this rather recently discovered disease of the hip joint has been differentiated from tuberculous hip disease, with which it has been so long confused, if the treatment is to be neglected because it runs a milder course and with much less resulting deformity.

Patients who have had Perthes' disease which has been diagnosed as tuberculous hip disease, and who have promptly received the best mechanical and general treatment usually accorded to tuberculous hips, have invariably made the best possible recoveries.

The neglected and untreated cases of Perthes' disease after one or two years show the heads of the femurs to be nearly destroyed, with the necks stunted, and in coxa vara or coxa valga positions. Abduction is partly lost, and movements of the hips in other directions are slightly limited. The legs are from 1 to 3 cm. short, and the patients walk with a limp.

The friction and concussion of weight-bearing on softened bone cause the erosion of the head and the stunting of the neck of the femur. The disease is self-limited. The extensive bone atrophy, together with the obliteration of the head of the femur, runs its course in about one year, and this is followed by a longer period of bone hardening and rebuilding. One proof of this limited course is that if the head of the femur is protected from the outset of the disease by adequate mechanical treatment so that it retains its rounded shape for two years, it again becomes hard, firm and self-protecting.

Roentgenograms show a decreased density of bone in the first year of the disease, and during the second and third years the deepened shadows indicate that the diseased bones have become harder and more dense than normal bones. This hardening resembles the eburnation of soft bones after rickets, in which they frequently become as hard and firm in a child of 5 years as in a man of 25.

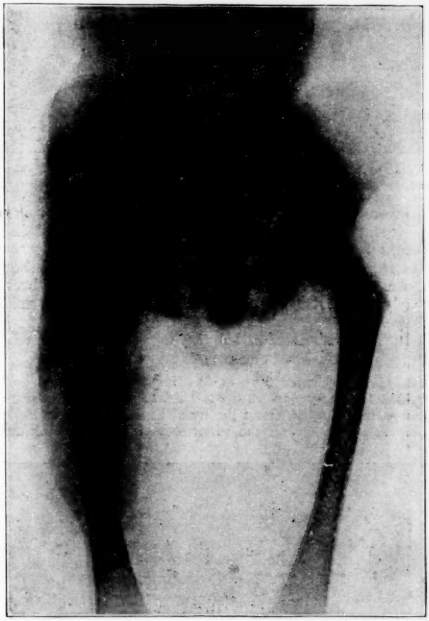


Fig. 1 (Case 1).—Atrophy and greatly reduced density of the pelvic bones, femur and muscles of the diseased side in acute Perthes' disease in a boy, aged 5 years.

There is perhaps no destructive joint lesion that is quite as amenable to treatment as Perthes' disease. The promptness with which the head of the femur rebuilds under mechanical protection is quite surprising.

If an adequate protective mechanical treatment is commenced even late in the course of the disease, when the head of the femur has been destroyed, and the treatment is then continued for a year or two, the head of the femur will regenerate to nearly its full rounded shape, in the same manner that the head of the femur rebuilds for several years after the reduction of a congenital hip dislocation, with the result that the ultimate shortening will be lessened fully a half. The limp is relieved in proportion to the regeneration of the head of the femur.

lesion presents undermined borders and deep maceration, and is typically characteristic of the disease in this location.

The back of the scalp is markedly involved (Fig. 4). The lesion takes the form of a segment of a circle, and is about 6 inches long. The advancing border consists of a ridge of scaly papules. There are no vesicles to be seen. The color is dull red somewhat masked by the hair. There is no alopecia.

The Organism.—Scrapings were made from the edge of most of the lesions, including the scalp, and fungi corresponding in type to the *Epidermophyton inguinale* were demonstrated in potassium hydroxid preparations.

Cultures were made from the edge of the scalp lesion on Sabouraud's medium and on glucose agar. Only *Staphylococcus aureus* grew in the Sabouraud tubes. On the glucose agar, *Staphylococcus aureus* appeared in a few days. About ten days later, small yellowish colonies of fungi made their appearance and slowly grew until in about three weeks they were about one-half inch in diameter (Figs. 5 and 6). The color was a dirty white with a slight tinge of yellow. A week or so later the colonies were covered with fluffy, white tufts. Subcultures were made on glucose agar. The organism reproduced true to type, but the cultures were also contaminated with staphylococcus.

Smears made from the cultures at about the third week showed the same organism observed in the scales from the lesions.

Hairs from the scalp lesion were examined in potassium hydroxid, but no organisms could be found.

Treatment.—The lesions were at first treated with Whitfield's ointment[2] with but little improvement. The patient was then given 3 per cent. pyrogallic acid for the scalp, pubic, crural, perineal and anal regions, and 3 per cent. chrysarobin for the remaining lesions. By May 22, 1917, the lesions had all disappeared.

Fig. 4.—The lesion on the scalp.

Fig. 5.—Culture of *Epidermophyton inguinale* from the scalp.

Fig. 6.—Culture of *Epidermiphyton inguinale* from the scalp.

COMMENT

Sabouraud[3] states that "it [the *Epidermophyton inguinale*] does not attack the hair; it requires the bottom of a flexure for its inoculation." The case described shows a lesion on the back of the scalp apparently autoinoculted from the extensive lesions elsewhere on the body. This location is not a flexure (except perhaps in very stout persons, and this patient is slender), so that it is apparent that at times inoculation may occur in places where there is no excess of heat and moisture.

Wall Building.

2. Seven per cent. salicylic acid and 14 per cent. benzoic acid in white petrolatum (Whitfield: Brit. Jour. Dermat., 1911, **23**, 375).
3. Sabouraud: Brit. Jour. Dermat., 1911, **23**, 385.

TREATED AND UNTREATED OSTEOCHONDRITIS JUVENILIS OF THE HIP*

WALLACE BLANCHARD, M.D.
Fellow of the American College of Surgeons
CHICAGO

Perthes' disease, or osteochondritis juvenilis of the hip, results in far more extensive bone atrophy than has been supposed. The bone atrophy and rarefication are so extensive that they have changed our previous conception of the pathology of the disease.

Up to the present time, the only joint and bone changes recognized in Perthes' disease have been a partial or total destruction of the head of the femur with a stumping of the neck, together with a thinning of the femoral shaft. Most authors have agreed with the unsustained suggestion, made by Freiberg[1] at the last session of this Association, that the disease is caused by tonsillitis or some other local infection. Experiments have been made on animals by Allison[2] to determine what influence a slight injury or displace-

* Read before the Section on Orthopedic Surgery at the Sixty-Eighth Annual Session of the American Medical Association, New York, June, 1917.

1. Freiberg, A. H.: The Evolution of Osteochondritis Deformans Coxae Juvenilis, THE JOURNAL A. M. A., Aug. 24, 1916, p. 658.
2. Allison, Nathaniel: Am. Jour. Orthop. Surg., October, 1915.

ment to the epiphysis might have on the hip, and his results were negative.

Since I desired to make a comparative study of diseased and normal hips, I had roentgenograms taken of cases of Perthes' disease, to include all of the pelvis as well as both the femoral shafts on single large plates. In these comprehensive pictures, I soon discovered decreased bone density and some atrophy of the pelvis on the diseased side in the acute cases.

The bone atrophy and lessened density are of about the same degree in the ilium, ischium and pubic bone as in the shaft of the femur. The atrophy of the ischium and pubic bone usually reduces the obturator foramen to one-half the size of the opposite foramen, as is well shown in Figure 4. On examining roentgenograms of both legs in one picture, it soon became apparent that all the bones of the leg suffered moderate atrophic changes. Decreased density is also seen in all the surrounding muscles and other soft parts.

The shrinking of the head of the femur leaves a vacant space in the acetabulum which shows principally adaptive changes.

Atrophy of bones and muscles is one of the first symptoms, and is as equally constant in the functionally used diseased leg as in the unused diseased leg. The atrophy becomes less as the distance increases from the hip.

Early and continued mechanical treatment that protects the head of the femur from weight-bearing, jar and concussion will usually preserve the head in its rounded shape; but observation of a number of treated and untreated cases shows that the best available mechanical treatment has little or no effect in either preventing or causing atrophy of the bones and muscles of the leg of the diseased side.

I have not been able to locate a tonsillar or other source of infection in a single case.

The moderate but extensive atrophy and decreased density of bone and adjacent tissues precludes the possibility of the disease being due to a circumscribed joint infection or an epiphyseal injury. The disease is undoubtedly trophic in character and is probably caused by an extensively disturbed blood circulation that impairs nutrition from a median pelvic line to the foot.

It is unfortunate that this rather recently discovered disease of the hip joint has been differentiated from tuberculous hip disease, with which it has been so long confused, if the treatment is to be neglected because it runs a milder course and with much less resulting deformity.

Patients who have had Perthes' disease which has been diagnosed as tuberculous hip disease, and who have promptly received the best mechanical and general treatment usually accorded to tuberculous hips, have invariably made the best possible recoveries.

The neglected and untreated cases of Perthes' disease after one or two years show the heads of the femurs to be nearly destroyed, with the necks stunted, and in coxa vara or coxa valga positions. Abduction is partly lost, and movements of the hips in other directions are slightly limited. The legs are from 1 to 3 cm. short, and the patients walk with a limp.

The friction and concussion of weight-bearing on softened bone cause the erosion of the head and the stunting of the neck of the femur. The disease is self-limited. The extensive bone atrophy, together with the obliteration of the head of the femur, runs its course in about one year, and this is followed by a longer period of bone hardening and rebuilding. One proof of this limited course is that if the head of the femur is protected from the outset of the disease by adequate mechanical treatment so that it retains its rounded shape for two years, it again becomes hard, firm and self-protecting.

Roentgenograms show a decreased density of bone in the first year of the disease, and during the second and third years the deepened shadows indicate that the diseased bones have become harder and more dense than normal bones. This hardening resembles the eburnation of soft bones after rickets, in which they frequently become as hard and firm in a child of 5 years as in a man of 25.

Fig. 1 (Case 1).—Atrophy and greatly reduced density of the pelvic bones, femur and muscles of the diseased side in acute Perthes' disease in a boy, aged 5 years.

There is perhaps no destructive joint lesion that is quite as amenable to treatment as Perthes' disease. The promptness with which the head of the femur rebuilds under mechanical protection is quite surprising.

If an adequate protective mechanical treatment is commenced even late in the course of the disease, when the head of the femur has been destroyed, and the treatment is then continued for a year or two, the head of the femur will regenerate to nearly its full rounded shape, in the same manner that the head of the femur rebuilds for several years after the reduction of a congenital hip dislocation, with the result that the ultimate shortening will be lessened fully a half. The limp is relieved in proportion to the regeneration of the head of the femur.

This rebuilding is a further proof that Perthes' disease is not an infective epiphysitis, since after the head of the femur has been destroyed by an epiphysitis, it does not regenerate.

Fig. 2 (Case 2).—Reduction of the head of the femur to a small pyramid of bone in E. M., a girl, aged 8, who had had Perthes' disease for one year; the leg is 2 cm. short; the patient walks with a limp.

Roentgenograms of untreated cases of Perthes' disease, taken from seven to eight years after the disease has run its course leaving only remnants of a head or a stunted neck, show that unaided Nature has been partly successful in rebuilding the head to its normal shape.

In Perthes' disease, lengthening of the leg rarely happens, but I have one case to report.

A. H., a boy, aged 6 years, has had pain in his hip, and walked for one year with the left leg abducted. The roentgenogram (Fig. 5) shows the usual atrophic changes. The abduction leverage on the softened neck and shaft of the

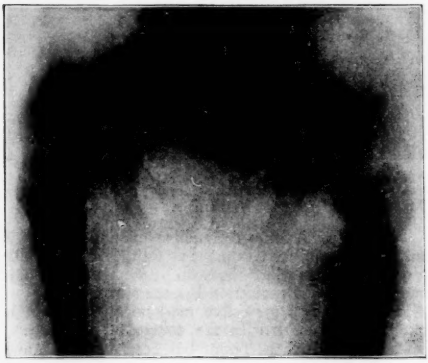


Fig. 3 (Case 2).—Regenerated head of the femur in E. M. at the age of 15 years; the patient had mechanical treatment during the second year of the disease, and walks without a limp.

femur during the one year of acute disease has straightened the normal outcurve of the shaft and elevated the neck about 35 degrees, causing a 4 cm. lengthening of the left leg. The abduction protected the head of the femur, which shows only atrophic changes. The hardening stage is somewhat advanced, and nothing but an osteotomy at the neck can restore the normal relations. The boy walks with a limp to the right.

In marked contrast to the depression seen in tuberculous, hip disease, patients with Perthes' disease usually retain the irrepressible spirits of healthy childhood.

In going over thirty years of hospital and private histories of tuberculous hip disease, I have been able to cull out over forty cases of undoubted Perthes' disease in which the patients were treated as having tuberculous hips and discharged cured with results too suspiciously good to have been obtained in tuberculous cases. In a number of these cases, the roentgenograms confirm the late diagnosis of Perthes' disease. It is a consolation to know that even if the diagnosis was incorrect the patient received the best possible treatment.

The condition is not likely to be confused with any other than tuberculous hip disease. The patient is usually from 4 to 10 years of age, walks with a slight limp, and complains of occasional pain. There is

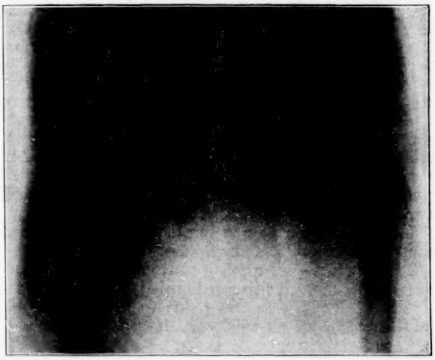


Fig. 4 (Case 3).—Head of the femur, in which only two small buttons are left, in an untreated case of Perthes' disease in a girl, aged 8 years; the leg is 2.5 cm. short, and the patient walks with a limp.

always some atrophy of the thigh and less of the leg. Abduction is limited, but movements in all other directions are free. These symptoms closely resemble the symptoms of an insidiously advancing tuberculosis of the hip joint, but the roentgenogram will usually decide. If it is too early for pathologic conditions to show decisively in the roentgenogram, one should be taken a month or several months later, but the mechanical treatment should be begun immediately, since in either condition the treatment will be the same, and the treatment cannot be commenced too early. With the hip joint well protected, constant exercise in the open air and a liberal raw food diet seem to be of greatest service in the treatment of Perthes' disease.

Every orthopedic surgeon is familiar with the plaster-of-Paris spica and with a variety of hip splints that afford good protection to the head of the femur, and I present the accompanying pictures of patients with Perthes' disease, the one in a plaster-of-Paris spica and the other in my strap iron hip splint with high shoe and crutches, only to emphasize the necessity of very complete protection to the hip joint in order to get the best possible ultimate results.

CONCLUSIONS

1. Osteochondritis deformans juvenilis seems to be a nutritional disease of the bones and muscles of the hip and leg.

Fig. 5 (Case 4).—Lengthening of the leg in Perthes' disease, a rare resulting deformity, in a boy, aged 6.

2. The femoral head that continues in functional use during the acute stage of the disease becomes obliterated wholly or in part by the attrition of weight-bearing on softened bone.

3. The head of the femur that is mechanically protected throughout the acute stage of the disease suffers only the same atrophic changes as the adjacent bones.

4. In convalescence, the destroyed head redevelops rapidly under mechanical protection, and redevelops more slowly and less perfectly without protection.

5. The disease progresses with one year of bone and muscle atrophy and lessened density followed by several years of increasing density and redevelopment.

6. The bone hardening resembles the eburnation after rickets.

7. From the foregoing facts it may be inferred that this disease of growing bone is nutritional character, and is due to a blood circulation that is disturbed from a median pelvic line to the foot, and that the head and neck of the femur are only incidentally affected.

8. The question of etiology remains of chief interest.

15 East Washington Street.

ABSTRACT OF DISCUSSION

DR. JOHN JOSEPH NUTT, New York: Although the author of the paper said that the etiologic factors are of the most interest, it seems to me that it is of more practical interest to decide on the best method of treatment. A great many advocate treating these patients not at all; some advocate treating them slightly; and some advocate treating them much more thoroughly. If we treat them too slightly and neglect them, I think we will have worse results than by making mistakes in diagnosis and treating them as tuberculous hips.

One point that I have never thought of before is that as the head becomes flattened and lessened, the line formed by the lower edge of the shadow of the neck does not quite fall in line with the line showing the upper border of the obturator foramen.

DR. PERCY W. ROBERTS, New York: I merely wish to ask Dr. Blanchard what, in his experience, have been the acute symptoms; or, perhaps, to put it differently, in what proportion of cases has he seen such symptoms as pain and spasm?

DR. FREDERICK J. GAENSLEN, Milwaukee, Wis.: I want to emphasize what I consider a very important point made by Dr. Blanchard. The tendency has been to let these patients go on about as they pleased, feeling that ultimate recovery, with but slight deformity, would result. I think he has sounded an important note of warning in advising against this, and I endorse his recommendation of judicious supportive treatment.

I wonder whether Dr. Blanchard did not make a mistake in referring to Dr. Freiberg as having written a paper on the infectious origin of osteochondritis. I think it was Dr. Kidner.

I became much interested in this condition when Calvé, in 1912, at Berc-sur-mer, showed me some cases of what we now know as Perthes' disease, which he described as pseudocoxalgia. When I visited Perthes at Tübingen in the same summer he showed me examples of the same group of cases. I told him at that time that it corresponded exactly to the type of cases that Calvé had shown me. He was much interested, and I let him have the reprint that Calvé had given me. At first he thought the cases were not the same; but later changed his opinion, and regarded them as identical. If we want to add another name to the already hyphenated appellation of the disease, I think the name of Calvé should find a place in it.

DR. SAMUEL C. BALDWIN, Salt Lake City: I did not hear Dr. Blanchard say anything about the symptoms, or whether in his cases he found much pain. Last year, at the clinical meeting of the American Orthopedic Association at Philadelphia, Dr. James K. Young showed roentgenograms of several cases in which there had been a great deal of destruction of the bone. I have had one very interesting case recently, which illustrated what Dr. Blanchard has said about these cases having been treated for tuberculous hip disease, years back, when they were really cases of Perthes' disease.

Fig. 6 (Case 5).—A girl, aged 5 years, with Perthes' disease, in a plaster-of-Paris spica with high shoe and crutches.

About fifteen years ago, I had a boy whom I treated for hip disease. Last summer his sister was brought to me with a condition that looked exactly like Perthes' disease of the

hip, but it was in the second metatarsal bone. When I saw the girl first she was about 16 years old. There was no swelling or tenderness, and she had had practically no pain in the joint. If she walks a great deal and gets very tired the joint will sometimes pain her just a little. The head of the second metatarsal bone looks exactly like the head of the femur in a case of Perthes' disease. About fifteen years ago, as I have said, I treated her brother for hip-joint disease and he got well a great deal more rapidly than these patients usually do. He is well now, with very little limp, and I have wondered whether this was a case of hip disease or what we now know as Perthes' disease. His mother told me that he had been at work for a number of years and had a very slight limp. I do not know whether this condition has been described in any other bones than the head of the femur or not, but in the case of the sister I was impressed by the shortening of the toe, such as we get in the head of the femur in Perthes' disease, and by the lack of other symptoms.

Fig. 7 (Case 6).—A boy, aged 5 years, with Perthes' disease, in a strap iron hip splint with high shoe and crutches.

DR. JAMES W. SEVER, Boston: I should like to make a plea for the calling of this condition Legg's disease rather than Perthes' disease or Legg-Perthes' disease.

In the routine treatment of the cases at the Children's Hospital, Boston, use is made of the abduction splint; or what we used to employ is the old Taylor splint, and what we use now is the abduction splint, just as we do in tuberculosis of the hip. The patients are guarded to prevent walking on the affected limb, which is kept abducted and on a certain amount of traction. A plaster-of-Paris spica is not used, and the patients go on crutches. They do not get much deformity in the neck of the femur. They do, however, get some flattening and overgrowth of the edges of the epiphysis; and they recover with some limp, but very little deformity.

DR. EMIL S. GEIST, Minneapolis: Regarding the condition of toe deformity, we saw yesterday, at the clinic of Dr. Hibbs, a roentgenogram of that case. The condition has recently been well described by Dr. Freiberg. It bears a relation to osteochondritis of the hip, in that these toe cases are usually the result of injury, and the question arises whether there is a similarity between these two conditions in that regard.

DR. WALLACE BLANCHARD, Chicago: Many cases of Perthes' disease run a very mild course and remain unrecognized for several years.

I think that there was no mistake in my quotation from Dr. Freiberg. I got the information from the Transactions of the Section on Orthopedic Surgery of the American Medical Association, 1916.

The obturator foramen frequently becomes one-half the normal size at the end of the first year of the disease. It usually becomes gradually smaller until it ultimately diminishes to one-third the size of the opposite foramen.

One gentleman asked whether these patients come to us early. They seldom come early, and many times not until the second or third year of the disease.

Dr. A. T. Legg announced a paper before the American Orthopedic Association at Pittsburgh, in June, but failed to appear. In the announcement, he said that he was going to give the histories and descriptions of seventy-five cases of regenerated and flattened heads of femurs, and that twenty-five of these had been regenerations of the head after the reduction of congenital dislocation of the hip. The others he could not account for; and it occurs to me that most of these, and perhaps all, are rebuilt heads after unrecognized Perthes' disease.

CEREBROSPINAL FLUID PRESSURE *

A. L. SKOOG, M.D.
KANSAS CITY, MO.

While there is included herewith the report of a case with data and pathologic material adding strong support to the theory that cerebrospinal fluid is a secretion from the choroid plexus cells, I trust that it may serve a purpose in another direction, namely, that it may encourage more frequent observations of spinal fluid pressure, and especially the utilization of a manometer for accurate registration of subarachnoid tension. We are accustomed to see present day case reports and hospital charts with a lumbar puncture record giving the cell count, and Wassermann, colloidal gold and globulin tests; but seldom do we see a recorded figure for the spinal fluid pressure. There are a number of pathologic states involving the central nervous system in which a spinal fluid pressure reading is of as much importance as (in some of more importance than) a cell count or Wassermann test.

Before launching into the more practical facts, there are several historical, anatomic and physiologic considerations to be reviewed.

Relative to pressure and the circulation of the cerebrospinal fluid, it is essential to know through what organ the fluid makes its appearance, and by what route the exit is made. The choroid plexus was known to Herophilus, Galen, Vesalius and others.[1] While this gland attracted medical men of the early Christian era, its function was appreciated only quite recently. Even now, with a considerable amount of valuable experimental data at our command, there remains some hesitancy in accepting the conclusion that the gland exists essentially for the purpose of secreting the cerebrospinal fluid. The work of

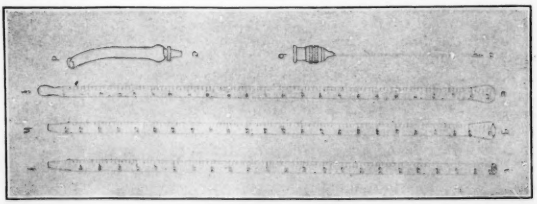


Fig. 1.—Rachiocentesis apparatus.

* Read before the Section on Nervous and Mental Diseases at the Sixty-Eighth Annual Session of the American Medical Association, New York, June, 1917.

1. Schläffer: Ueber den Bau und die Function der Epithelzellen des Plexus Choroideus, Beitr. z. path. Anat. u. z. allg. Path. (Ziegler's), Festschrift für Prof. Julius Arnold, 1905, p. 101.

Magendie,[2] Luschka,[3] Falkenheim and Naunyn,[4] Sicard,[5] Meek,[6] Mestrezat,[7] Cathelin[8] and others ought, however, to leave no doubt on the question. Cushing[9] accepts as true that the choroid plexus is the chief source of supply, but states that "this has not been conclusively proved." The ependyma cells probably add a small quantity of liquid.

How and where does this secretion leave the subarachnoid space? The responses to this question are less satisfactory than are those respecting its formation. The once much discussed pacchionian theory is not tenable. It has been held that the fluid escapes along the cranial and spinal nerve roots and blood vessels, all of which have projections from the leptomeninges. Weed[10] states that fluid escapes by way of the villi in the subarachnoid space and thence into the lymph and venous channels.

The cerebrospinal fluid differs from all other human secretions. It is conclusively not a transudate. It is not lymph. The secretion resembles rather closely the fluids found within the eyeball and the internal auditory organs.

Is there a circulation? There does not seem to be any clearly systematic and continuous flow of the spinal fluid from one area of the ventricle or subarachnoid space to another. However, ample proof is at hand to show that there are movements. Sicard and Cestan[11] injected India ink into the subarachnoid space in the atlanto-occipital region, and found a rather rapid distribution of the carbon particles in the culdesacs, the subarachnoid areas and around the nerve roots. Dogs and fresh cadavers were used for these experiments. Later others have demonstrated a circulation of the fluid with movements directed caudad and cephalad. I am inclined to look on these movements, which constitute the circulation, as coming from transmitted energy having its source in the cardiac and respiratory acts. Oscillations from both can be seen at every normal spinal puncture. Luschka demonstrated a lining of cilia on the projecting surface of the ependyma cells. Others have described a similar structure. These cilia may be a factor in the circulation.

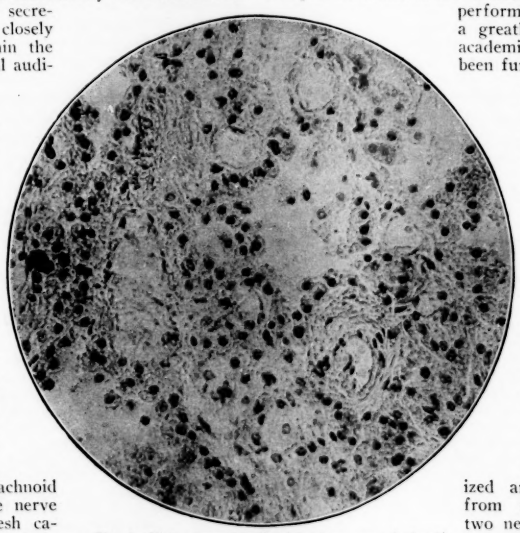


Fig. 2.—High power magnification of an area of choroid plexus gland in case reported, showing normal and pathologic choroid cells.

Quincke,[12] in 1872, while working in a physiologic laboratory, reported some experimental cerebrospinal fluid work on animals with reference to pressure. Nineteen years later Quincke[13] published reports on the first lumbar punctures performed in pathologic human cases, which included thirty adults and twelve children. A description of his manometer appears. This consists of a needle with its mandarin, rubber connector, a glass tube and a measuring stick with millimeter graduations. For some years following Quincke's reports there was a slow addition to our experimental knowledge and a comparatively small number of lumbar punctures performed for diagnostic and therapeutic purposes. During the past ten years, a rapid increment in the number of lumbar punctures performed has been noted, and a greatly increased fund of academic and clinical data has been furnished us along physical, chemical and biologic lines.

A number of manometers have been presented to the profession, mostly for water readings. The few mercury apparatus are not as practical. The water readings may be converted into mercury by dividing with 13.6. The two-way and three-way needles are convenient, but they rust and early give trouble.

I use an apparatus[14] of my own design (Fig. 1). It is simple, easily sterilized and readily kept free from rust. It consists of two needles of different size and strength, a short rubber connector and glass manometer tubes. The stylet should be withdrawn from the needle before puncturing. First one connects the first glass manometer tube into the connector (*c* and *d*). Then, the flow being established, the connector is immediately applied (*c* into *b*). If the pressure is abnormally high, the other glass tubes which have ground ends may be used to make a longer vertical column. They have millimeter graduations. The outer end of the needle (*b*) is ground so that a syringe of Lüer type can be adapted. The rapidity of flow can be controlled by the stylet. When the flow comes from the needle in a stream or dropping rapidly, it should be checked partially with the stylet. When fluid is drained off too rapidly, there is more danger of postoperative headaches or disagreeable head symp-

2. Magendie: Mémoire sur un liquide qui se trouve dans le crâne et la colonne vertebrale de l'homme et des animaux mammifères, Mémoire 2, Jour. de physiol. exper., January, 1827, **7.**
3. Luschka: Die Adergeflechte des menschlichen Gehirns, Berlin, 1855.
4. Falkenheim and Naunyn: Ueber Hirndruck, Arch. f. exper. Path. u. Pharmakol., 1887, **22**, 261.
5. Sicard: Le liquide céphalo-rachidien, Paris, 1902.
6. Meek: A Study of the Choroid Plexus, Jour. Comp. Neurol. and Psychol., 1907, **17**, 286.
7. Mestrezat: Le liquide céphalo-rachidien, Paris, 1912, p. 76.
8. Cathelin: La circulation du liquide céphalo-rachidien, Paris, 1912.
9. Cushing: Studies on the Cerebrospinal Fluid, Jour. Med. Research, 1914, **31**, 1.
10. Weed: Studies on the Cerebrospinal Fluid, Jour. Med. Research, 1914, **31**, 21.
11. Sicard and Cestan: Bull. et mém. Soc. méd. d. hôp. de Paris, 1904, **6**, 715.
12. Quincke: Zur Physiologie der Cerebrospinalflüssigkeit, Arch. f. Anat. u. Physiol., 1872.
13. Quincke: Die Lumbalpunktion des Hydrocephalus, Berl. klin. Wchnschr., 1891, **9**, No. 38.
14. Obtained from the Physicians' Supply Co., Kansas City, Mo.

toms, which often continue for some days. In intracranial lesions with greatly increased pressures, especially tumors located in the posterior fossa, too sudden withdrawal of the spinal fluid might produce alarming symptoms. The literature contains reports of a few deaths resulting from lumbar punctures performed on patients having a tumor in the posterior cranial fossa.

It might be contended that a manometer for accurately measuring the spinal fluid pressure is not necessary for practical purposes. I cannot agree to such a contention if careful spinal fluid work is to be considered. Recorded figures for pressure have much diagnostic value for a number of organic diseases within the cranial and spinal cavities. The number of drops per minute, or stream volume, can furnish only a very crude estimate of the pressure. Often, too, such a method leads to gross error. A cauda equina root in the lumbosacral cistern, or arachnoid tissue, might almost stop the flow; but if a manometer be applied, a pressure of several hundred millimeters will be found. The medulla may be pressed down into the foramen magnum, allowing only a small number of drops per minute, while if the manometer is used a high pressure reading might be obtained. When the spinal fluid is removed simply for therapeutic reasons, it is important to take a reading from time to time during the puncture.

The normal spinal fluid pressure as measured by a manometer at the lumbar region is subject to variations. The reason for some of these variations has not been explained satisfactorily.

I find that the normal pressure in the normal person taken in the sitting posture with head bent forward ranges from 90 to 150 mm. of water. In searching the literature we find a wide range of differences for the normal pressure. There is evidence in some reports that pathologic cases were used to find so-called normal pressures. As far as possible, especially if one is not doing frequent lumbar punctures, the patient should be placed always in about the same posture.

Whether the head is bent forward or held erect occasionally influences the reading a few millimeters. Cardiac and respiratory oscillations are always observed, the latter being greater than the first and ranging from 10 to 20 mm. Coughing and physical strains may produce a sharp increase in the pressure.

Why do we have this subarachnoid pressure, and whence is the energy derived? Hydrostatic pressure accounts for possibly a small portion. The blood vessels and transmitted heart muscle energy cannot account directly for it; at least only slightly. High blood pressure does not cause an increased cerebrospinal fluid pressure. The elasticity of the leptomeningeal tissues seems to account for a portion. Closely associated with this is capillarity. The choroid plexus gland, or its secretion, is responsible for the largest percentage of the pressure. In most of the places the subarachnoid cavity has walls comparatively closely coapted. Pfaundler[15] names the following four component factors in normal cerebrospinal pressure: (1) compression pressure, contained within the fluid itself; (2) hydrostatic pressure; (3) pressure transmitted from the blood, and (4) elastic pressure, deriving its energy from the elastic subarachnoid walls. The last seems to be the most important. The portion described by Pfaundler as compression pressure should not be considered separately. It is a result of the other three.

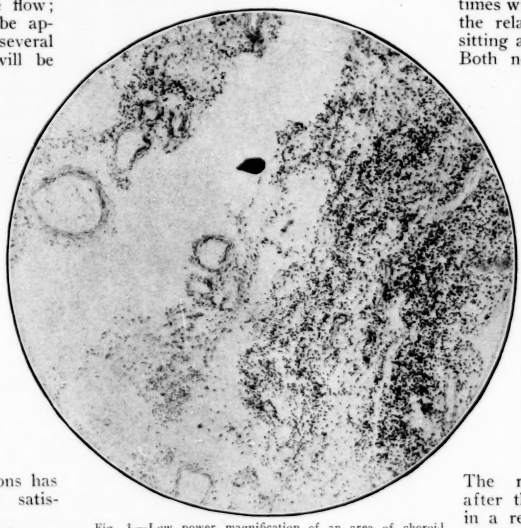


Fig. 3.—Low power magnification of an area of choroid plexus gland in case reported. The villi and choroid cells have been destroyed completely. Some vascular infiltration is seen. Massive round cell infiltrations are much in evidence.

I have performed lumbar punctures a number of times with a view to obtaining the relative pressures in the sitting and reclining postures. Both normal and pathologic material has been used. After the pressure has been read in the sitting posture, the patient is placed in a reclining position, leaving the head on a level with the point of entrance of the needle, which has remained in the canal during the change of posture. In the majority of cases the pressure remained about the same both for the normal and pathologic cases. In one case of chronic serous meningitis, the pressure at the start was 270 mm. of water in a sitting posture. The registration was 190 after the patient was placed in a reclining position. The pressure returned promptly to 270 when the patient was restored to the initial sitting posture.

A great number of pathologic states involving the brain, spinal cord, and their membranes will produce alterations of tension of the subarachnoid fluid. States with increased pressure exceed tremendously those with decreased pressure.

In my experience, brain tumor cases have furnished the highest pressures, often registering from 620 to 700 mm. and more. There have been reported pressures reaching 1,000 mm., but these are rarely encountered. Much caution should be exercised in lowering the pressure when high figures are registered.

Tuberculous meningitis gives an exceptionally high pressure, but does not reach that of the tumors. All forms of syphilis of the central nervous system, including tabes and general paresis, furnish high pressures

15. Pfaundler: Ueber Lumbalpunktionen an Kindern, Jahrb. f. Kinderh., 1899, **49**, 264.

ranging from 250 to 400 mm. Paresis and secondary or tertiary meningitis supply the higher figures.

Hydrocephalus, if the intracranial pressure has not prevented an outflow, causes a greatly increased spinal fluid tension. In a number of the chronic degenerative neural diseases there are moderately increased pressures.

All the acute meningitis cases will show a sharp rise in the spinal fluid pressure. Acute poliomyelitis, rabies, tetanus, several intoxications and alcoholic delirium furnish somewhat increased pressures, usually about 200 to 300 mm.

Head traumas and particularly brain hemorrhages will provoke a considerable increase in the spinal pressure.

The most frequent causes for real, pathologically low pressures are inflammations of the spinal cord preventing patency of the subarachnoid space and the flow of fluid to the lumbosacral cistern. A spinal cord neoplasm or cyst may cause a similar condition. When a tumor of sufficient size is pressing on the cord, the manometer may show only a few millimeters' pressure (about 20 to 40 mm.). After the removal of from 1 to 5 c.c. of the spinal fluid by lumbar puncture, this low pressure promptly drops to nil.

The following is an abstract of a case report with low pressure:

A man, aged 57, concerning whose family and personal history no data were obtainable, but who was admittedly an alcoholic, complained of weakness, headache and a general decline. There was much mental torpor. The pupils were sluggish to light and irregular. All deep reflexes were mildly increased.

A necropsy held twelve hours after death revealed changes of a specific nature throughout the cardiovascular system. The dura was much adherent to the leptomeninges. The pia-arachnoid was denser than normal and had numerous whitish plaques scattered about.

The brain was rather wet. The choroid plexus could be traced through all the ventricles, but everywhere was more or less excessively adherent. The villi could not be separated, as can be done in the normal brain. The choroid cells were, to a great extent, completely destroyed. In some large areas not a single cell was visible. Among the villi best preserved there could always be found some cells degenerated, or even destroyed. In case all the cells had been destroyed, there remained stubs of villi, and more or less agglutinated masses. These masses contained dense connective or cicatricial tissue.

Specific infiltrations with large masses of round cells were nicely illustrated. These gummatous masses were irregularly distributed, but were most numerous and largest in the areas in which the destructive process was more complete.

The arteries, especially the smaller arterioles, frequently had thickened walls. Often the walls were considerably thicker in one area of the vessel than in another.

Rachiocentesis is customarily performed at the third or fourth lumbar spaces, hence the term "lumbar puncture." However, there are a few instances in which it can be performed to greater advantage in one of the dorsal or cervical spaces. As an illustration, in a case of tetanus I have successfully injected antitoxin into the subarachnoid space between the upper dorsal vertebrae. The lumbar region was so arched and rigid that no needle could enter its spaces. Also when a transverse cord lesion exists I have employed dorsal and cervical punctures in order to demonstrate the difference in pressure in the lumbar region and in the region above, which contained a tumor, cyst or other possible compressing material. The fluid collected from above and below certain lesions has often physical and chemical differences of much diagnostic significance.

SUMMARY

The abstracted case report contained herewith demonstrates that impaired function or destruction of the choroid plexus gives a diminished quantity of cerebrospinal fluid and a lowered pressure, as shown by rachiocentesis. This supports the contention that at least the bulk of the cerebrospinal fluid is secreted by the choroid plexus cells.

There exists a definite spinal fluid pressure which has certain variations according to various observations. A minimum figure can be placed at 90 and a maximum at 150 mm. (water manometer). When pathologic states exist, high pressures greatly preponderate. It is more difficult to be assured of the reality of a low pressure, but its presence has much diagnostic weight.

Accurate registration of the subarachnoid fluid tension within the entire craniospinal cavity should be more generally recorded, for comparative pressures have a great deal of diagnostic value in many neurologic diseases.

ABSTRACT OF DISCUSSION

DR. WILLIAM M. LESZYNSKY, New York: I should like to introduce a word of caution in regard to the possible breaking of the needle in lumbar puncture, which has occurred in many instances. The ordinary steel needle should not be used. Lately a needle has been made according to my suggestion, called a nickeloid needle, which is noncorrosive and can be bent at a right angle, so that under ordinary usage breakage is practically impossible.

DR. A. L. SKOOG, Kansas City, Mo.: I broke one needle in puncturing the skin. When I started doing lumbar punctures I experimented on cadavers. I broke one needle on the cadaver. It was an iridium-platinum needle, and I have never used one since. All the needles which I use are tested at intervals. It is wise to be careful with the needles. It is important to know the pressure of the cerebrospinal fluid, and one cannot always tell this by the rapidity of the dropping. If there is a greatly increased pressure patients are more likely to have severe headaches. I would give a word of warning about suddenly reducing a very high pressure of the cerebrospinal fluid to normal; for instance, in the case of tumor in the posterior fossa. One must be very careful. A number of deaths have resulted from sudden reduction of tension in tumors of the cerebellum and that region.

Common Colds.—The phrase "common colds," like "charity," covers a multitude of sanitary sins, and curiously enough the name has been applied to a group of affections which, far from depending absolutely on cold, are frequently the direct result of living in close, overheated surroundings having a lower relative humidity than the driest desert known to man. The word "colds" means an acute infection of the lining membranes of the nose, tonsils, throat, and larger bronchial tubes. The process may be even more extensive and amount to a general infection of the entire body. All of the breathing apparatus, excepting the smaller terminal portions in the lungs, may be involved, and as a matter of fact the disease may, and often does, spread to these, thus producing pneumonia. In this connection it may be pointed out that pneumonia kills more people in the United States than any other disease excepting tuberculosis and heart disease. Many pneumonians begin as a common cold. Colds do not produce tuberculosis, yet unfortunately what is considered as a cold may be in reality the first symptoms of the white plague. In every case, however, colds are dependent on the growth and activity of living germs which are received from other persons.—Rucker, *Pub. Health Rep.*

MORPHOLOGIC APPEARANCE OF CANCER CLINICALLY CURED BY RADIUM AND ROENTGEN RAY*

ISAAC LEVIN, M.D.
Clinical Professor of Cancer Research, New York University and Bellevue Hospital Medical College; Chief of the Department of Cancer Research, Montefiore Hospital and Home

AND

BARNET JOSEPH, M.D.
Adjunct to the Department of Cancer Research, Montefiore Hospital and Home

NEW YORK

The reports on the result of surgical treatment of cancer cases as well as the more recent reports on radium and Roentgen-ray therapy of the disease abound in expressions "radical cure," "clinical cure" and "improvement." It is appropriate, therefore, to preface the analysis of the cases presented for this study by a correct definition of these terms.

A surgical statement that a cancer case is radically cured implies that the patient is alive and free from the disease from three to five years after the operation. The probable ultimate result of a radical operation may be inferred among others from the following study of a French surgeon, Heurtaux. During a period of thirty years he operated in 341 cases of carcinoma of the breast; 284 cases could be traced for long periods of time, and of these patients, 43.3 per cent. remained well four years after the operation and should consequently be considered radically cured. Four years later, or eight years after the operation, only 16.9 per cent. remained well and free from a recurrence. Ten years after the operation only 12.32 per cent. remained well, fifteen years after the operation 8.1 per cent., and twenty years after the operation only 2.46 per cent. remained free from a recurrence.

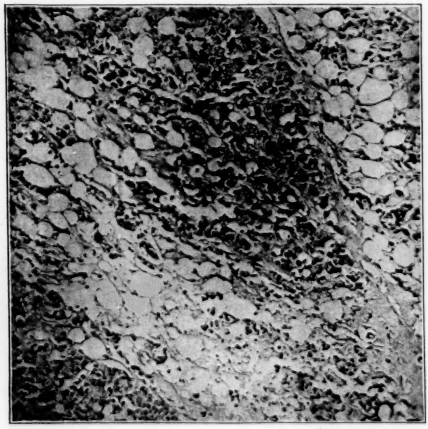


Fig. 1 (Case 1).—Scirrhus carcinoma of the breast.

A recurrence of cancer, no matter how late after an operation, indicates that some tumor tissue was left behind somewhere in the organism at the operation. A radical operation for a malignant tumor means a complete eradication of all tumor tissue from the organism. An analysis of Heurtaux's writings, and many other similar publications, thus shows that in by far the greatest majority of cases of cancer the best surgical methods of treatment do not completely eradicate the disease and consequently do not induce a radical cure of the disease. Most frequently, then, surgery only postpones a recurrence and thus prolongs life. It is quite legitimate, nevertheless, to consider such a result a clinical cure, since the patient remains clinically well for a longer or shorter period of time, and the presence in the organism of the remnants of the malignant tumor cannot be detected by any means at our disposal. Furthermore, a clinical cure takes place even when the malignant tumor does not entirely disappear, but loses the characteristics of its malignancy, ceases to grow and invade the surrounding tissue, behaves clinically like a benign tumor and retains these characteristics for a sufficient length of time. To recapitulate: A clinical cure of cancer means a gross destruction or diminution of the size of the primary tumor with disappearance of symptoms and a well being continued for a sufficiently long time to preclude the possibility of a spontaneous remission of the disease.

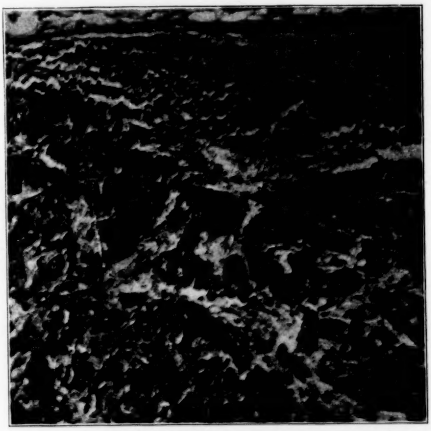


Fig. 2 (Case 1).—Metastatic carcinoma of a lymph gland.

An "improvement," "palliation" or "palliative improvement" must be considered the alleviation of distressing symptoms without any inhibition of the development and growth of the malignant tumor. A tracheotomy for the relief of dyspnea in carcinoma of the larynx, gastrostomy for relief of obstruction in carcinoma of the cardia, gastro-enterostomy in carcinoma of the pylorus, and colostomy in carcinoma of the colon produce such a palliative improvement, which may be followed by increase of weight and strength and temporary well being of the patient. The action of radium and Roentgen rays in arresting hemorrhage, foul discharge and relieving pain in far

* From the Department of Cancer Research of the Montefiore Hospital and Home.
* Read before the Section on Pathology and Physiology at the Sixty-Eighth Annual Session of the American Medical Association, New York, June, 1917.

advanced inoperable cancer cases also induces thereby a palliative improvement.

One of us[1] recently reported on several cases of inoperable carcinoma and sarcoma which remained clinically cured for a number of years by the aid of radium and Roentgen-ray therapy. The number of similar cases reported by other investigators is so great, and the therapeutic action of these radiations is so frequently satisfactory under correct and uniform conditions, that the specific action of the rays on malignant tumors does not require any further discussion. The fact that in the vast majority of cases of malignant tumors which undergo the radium and Roentgen-ray treatment a palliation or a clinical cure and not a radical cure is obtained does not detract anything from the value of the method.

The clinical effect of the radium and Roentgen rays on malignant tumors is accompanied in the great majority of cases by distinct morphologic changes in the tumor tissue. As a general rule, it may be stated that tissues consisting of less differentiated, younger cells, cells in a state of active proliferation, are most deeply influenced by the rays, and that consequently there is selective action of the rays on the actively proliferating tumor cells, as compared with the normal organ cells. The first morphologic changes which occur in carcinoma or sarcoma tissue under influence of radium and the Roentgen rays are observed in the tumor cells themselves, and are manifested by the vacuolation of the protoplasm, pyknosis of nuclei, karyolysis, and ultimately complete necrosis of the cell. These cellular changes are accompanied by a round cell infiltration which replaces the destroyed cancer cells. Subsequently this round cell infiltration is changed into dense sclerotic connective tissue poor

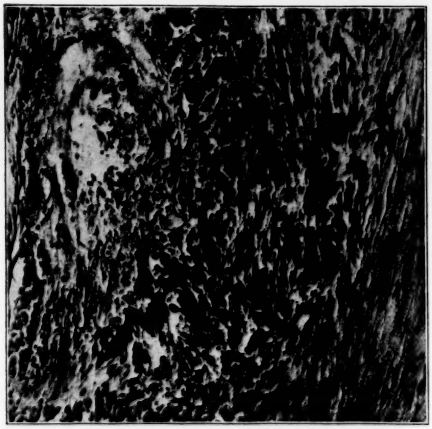


Fig. 3 (Case 2).—Melanotic cancer, primary tumor, before treatment.

in blood vessels. This connective tissue formation may become very extensive, surround islands of cancer cells, and assist in the destruction of the latter. Indeed, this new connective tissue formation is the most generally observed morphologic change in the tumor. Some observers even maintain that this connective tissue formation is the only direct effect of radiation, while the destruction of the tumor cells is secondary and is due to lack of nutrition. However, this opinion is not borne out by facts. The first morphologic change noted is always the destruction of the tumor cells, and the connective tissue appears only

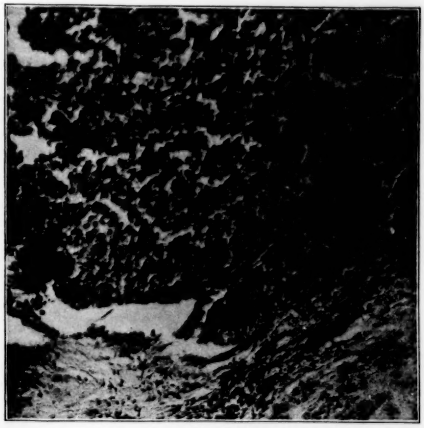


Fig. 4 (Case 2).—Melanotic cancer of the lymph gland twenty months after the beginning of the treatment.

subsequently. Moreover, in certain conditions — for instance, rodent ulcer of the skin — the epithelioma cells disappear and the ulcerated area is covered with skin epithelium without any formation of connective tissue. The assumption, on the other hand, that the formation of connective tissue is secondary to the accumulation of dead tumor cells and is analogous to formation of connective tissue around foreign bodies and particles of dead matter is also hardly tenable. Were this connective tissue formed only by the stimulus of the dead tumor cells, then the radiations would dissolve it subsequently as easily as it dissolves a keloid, for instance. However, this does not take place, and the amount of the peculiar sclerotic connective tissue usually increases with subsequent radiations.

A case of carcinoma of the sigmoid with metastatic dissemination in the peritoneum previously reported by one of us[1] demonstrates the importance and extent of this connective tissue formation. An exploratory laparotomy was done on the patient which revealed a carcinoma of the sigmoid and a peritoneal dissemination with minute metastatic nodules. The case was declared to be inoperable and the tumor was not removed. The patient was treated with massive doses of Roentgen rays for six months; subsequently the patient died from an acute intestinal obstruction. At the necropsy there were found in the peritoneal cavity several loops of the small intestine adherent by old adhesions to the posterior surface of the tumor mass in the sigmoid. The peritoneum was studded with numerous white plaques, varying in size from 1 to 5 mm. in diameter. Microscopic examination of a section taken through two loops of the small intestine that were firmly bound together by adhesions showed that the latter consisted of a thick layer of connective

1. Levin, Isaac: Surg., Gynec. and Obst., 1915, **21**, 374.

tissue containing occasional nests of tumor cells. The peritoneal nodules were composed of dense connective tissue, with occasional minute groups of tumor cells. The amount of connective tissue in these peritoneal nodules of carcinoma was entirely out of proportion to the number of carcinoma cells present. On the other hand, the peritoneal endothelium of the sections of the wall of the small intestine adjacent to the plaques was normal and showed no connective tissue formation.

The source of the new connective tissue formed under the influence of the radium and Roentgen rays must be looked for either in the stroma of the tumor or in the round cell infiltration that closely follows the destruction of the tumor cells by the radiations. It may be stated then that while the destruction of the tumor cells is the primary phase and the formation of new sclerotic connective tissue a secondary, it is at least as important a phase in the morphologic changes which

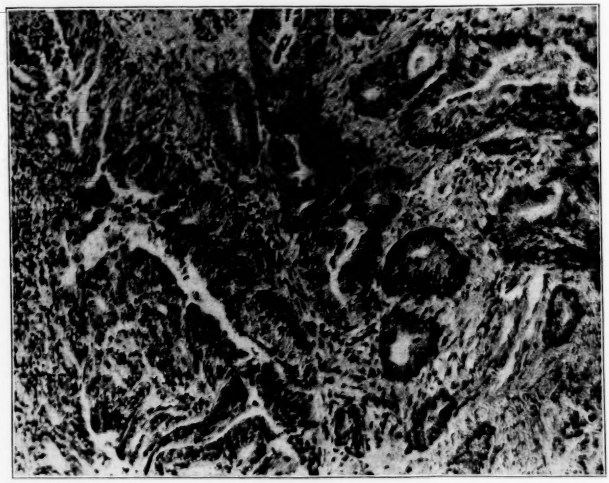


Fig. 5 (Case 3).—Adenocarcinoma of the colon, recurrent, before treatment.

take place in malignant tumors under the influence of radium and Roentgen rays. Furthermore, the microscopic study of this case of carcinoma of the sigmoid indicates the possibility that the proliferating capacity and the consequent clinical malignancy of a tumor may be inhibited under the influence of the radiations without the presence of any apparent morphologic changes in the tumor tissue. The deeper portions of the sigmoid tumor, as well as a certain number of the peritoneal plaques, showed morphologically unchanged carcinoma cells. Nevertheless, in over six months not a single one of the minute nodules found at the operation developed into a discrete secondary tumor, and the primary sigmoid tumor did not increase in size during the time.

The following series of cases, observed recently by us, present a similar condition of clinical cure without any apparent morphologic changes in the tumor tissue:

CASE 1.—Mrs. W. Y., aged 40, was admitted to the Montefiore Hospital in 1906 suffering from bronchial asthma and emphysema. In August, 1915, a hard mass the size of a hen's egg was discovered in the outer margin of the right breast. The skin was adherent to the tumor, and there were enlarged glands in the right axilla. A clinical diagnosis was made of carcinoma of the breast with the involvement of the axillary glands. The general condition of the patient precluded any operative interference, and she was treated by local application of radium to the breast and axillary glands and Roentgen-rays through the chest wall. The breast tumor and the gland at first diminished somewhat in size and then remained stationary. Seventeen months later the patient died from her pulmonary condition. A complete necropsy was performed by Dr. B. S. Kline. A minute search was made for possible metastases, but none were found anywhere in the organism. The microscopic examination of the tumor of the breast showed a scirrhus carcinoma, and the lymphatic glands of the axilla were filled with solid carcinoma. Figures 1 and 2 show that morphologically both the primary tumor and the metastases in the lymph glands appeared quite malignant and did not show any changes characteristic of radiotherapy. Nevertheless, nearly a year and a half after the condition was discovered, no dissemination or distant metastases were found anywhere in the organism.

As a rule, a patient with carcinoma of the breast with the involvement of the axillary glands, if left untreated, dies in less than a year and a half from a general dissemination of the carcinoma. It is thus quite evident that in the case reported here radium and Roentgen-ray therapy inhibited the further growth and dissemination of the carcinoma tissue and transformed it, as it were, into a biologically and clinically benign type of a tumor, though it did not change its morphologic appearance.

CASE 2.—Mrs. B. K., aged 40, developed a pedunculated tumor the size of a small orange on the skin of the right supraclavicular region. The tumor was removed in March, 1915, with the pedicle. There was left after the operation an ulcerated area 1 cm. in diameter that did not heal. The microscopic examination (Fig. 3) of the tumor showed it to be a melanotic cancer. The case was then referred to one of us for radium and Roentgen-ray treatment. On examination there was observed the ulceration described above and an enlarged supraclavicular lymph gland about three-fourths inch long. Under the influence of the ray therapy, the ulcer healed and the gland at first diminished somewhat in size and then remained stationary. At present, two and one-half years after the beginning of the treatment, the patient is clinically perfectly well, and no metastatic tumors have developed anywhere. Melanotic cancer is an exceedingly malignant condition, and the average life of the patient is not more than two years. Coley and Hoguet,[2] who made an exhaustive study on the subject, state that the melanotic cancer in the cervical glands is especially malignant, causing death in a short time. In October, 1916, twenty months after the beginning of the treatment, the supraclavicular gland was excised for diagnostic purposes. The microscopic examination (Fig. 4) of the gland showed a morphologic picture identical with the one found in the primary tumor before the initiation of the treatment. Nevertheless, as stated above, at present, eight months after the second operation and two years and three months after the

2. Coley, W. B., and Hoguet, J. P.: Ann. Surg., 1916, **64**, 206.

first, the patient is perfectly well and did not develop any secondary tumors anywhere. Here again the radiotherapy inhibited the proliferating power of the cancer cells and arrested the growth of the tumor without having produced any apparent morphologic change.

CASE 3.—Mr. B. G., aged 51, was operated on in December, 1915, for adenocarcinoma of the ascending colon. The tumor was radically removed and a right colostomy performed. In February, 1916, the patient was admitted to Montefiore Hospital. On admission, no recurrence of the carcinoma was found anywhere. In July, 1916, an attempt was made to close the colostomy wound by the aid of clamps, but the operation was discontinued since a recurrence was discovered at the intestinal bridge of the colostomy opening. There was felt a hard tumor mass about a cubic inch in size. The outer surface of the tumor consisted of an ulcerated area about three-fourths inch in diameter. A small piece was excised for examination, and showed microscopically an adenocarcinoma (Fig. 5). For the last ten months the patient has been undergoing Roentgen-ray treatment. He is clinically well, the tumor did not increase in size, the ulceration appears to be partly healed, and no secondary tumors or metastases developed anywhere. Recurrences in intestinal carcinoma are generally malignant, and disseminate all over the peritoneum and kill the patient very rapidly. Recently another piece was excised for examination, and the result of the microscopic study of this later specimen (Fig. 6) is very instructive. There is no direct evidence of any extensive degeneration of the cancer cells or excessive formation of new sclerotic connective tissue characteristic of radiated malignant tumors. But, unlike Cases 1 and 2, the two specimens of this case removed before and after treatment do show a certain morphologic difference. While the specimen taken before treatment shows a perfectly characteristic picture of adenocarcinoma in every field, the specimen obtained after treatment is not so characteristic, and a great many of the tubules resemble more a benign adenoma than an adenocarcinoma. These findings are somewhat difficult to explain. It is possible that the superficial, more malignant part of the tumor was destroyed under the influence of the rays. The partial healing of the ulcerated surface coincides with this assumption. The deeper portions were then inhibited by the Roentgen ray in their further malignant transformation. In any event, a clinical inhibition is quite evident in this case as well.

We have been unable to find in the literature any description of similar cases in which a clinical arrest of disease was accompanied by a complete absence of morphologic changes. Morson,[3] in his description of the various changes which occur in malignant tumors on exposure to the gamma rays of radium, states that there may take place a loss of the reproductive function of the cancer cell, but he does not illustrate this condition in any of his cases. On the other hand, there is a good deal of experimental evidence that elucidates the clinical and morphologic phenomena described in this presentation. Von Wassermann[4] reported in 1914 the results of his experiments on the action of radium on small pieces of mouse carcinoma in vitro. He has shown that the cells remain alive, but the pieces do not grow when they are subsequently inoculated in a healthy mouse. He concludes that the rays act directly on the cancer cells. However, they do not kill the cells, but impair the genuceptors or the proliferating apparatus, and as a result inhibit the formation of new cells. The actual death of the cancer cell and disappearance of the tumor is produced either through the aging of the remaining cells or through the cytolytic powers of the organism. Therefore, the rays act selectively on tissues, the cells of which are rich in genuceptors and proliferate rapidly. This hypothesis of von Wassermann fits in very well also with the frequently observed clinical fact that a malignant tumor may continue to diminish in size weeks after the ray treatment was discontinued. In a recent publication on the effects of radium on tissue growth in vitro, Prime[5] reports very similar results. He observed that radium injures the nucleus of the cells growing in animal plasma, so that it prevents further formation of mitosis. On the other hand, it does not injure the life and functions of the cell. For instance, the outwandering of the cells from the main mass of the tumor in the culture due to ameboid motion continues with the same rapidity as in the nonradiated control cultures. The beating of a piece of a heart muscle placed in the plasma culture continues for the same length of time in the radiated as in control cultures. Identical results were obtained

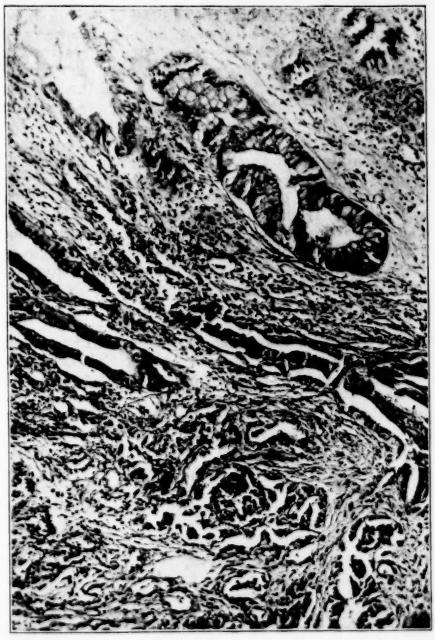


Fig. 6 (Case 3).—Adenocarcinoma of the colon after treatment.

by Halberstädter,[6] who studied the action of the radium rays on trypanosomes in vitro. The effect of the rays consisted in the inhibition of the infectivity of the parasites; that is, they lost their power to proliferate when introduced into a new host after having been radiated in vitro. On the other hand, the motility of the trypanosomes is not impaired by the action of the radium.

Thus the clinical investigations reported in this presentation as well as experimental studies show that the radium and Roentgen rays may impair deeply the proliferating power and consequently the clinical malignancy of cancer cells without producing any change in the morphologic appearance of the tumor. Indeed, it is quite probable that the first effect of the

3. Morson, A. C.: Brit. Jour. Surg., 1915, **2**, 354.
4. Von Wassermann, A.: Deutsch. med. Wchnschr., 1914, **40**, 524.
5. Prime, Frederick: Jour. Cancer Research, 1917, **2**, 107.
6. Halberstädter, L.: Berl. klin. Wchnschr., 1914, **51**, 252.

rays on every malignant tumor consists in the inhibition of the proliferating power, in the *sterilization*, as it were, of the cancer cells. The degeneration and destruction of the cancer cells and the formation of the sclerotic connective tissue takes place subsequently, under the influence of the rays. Moreover, this cell degeneration and cell death may not be due d rectly to the action of the rays, but takes place in the natural course of the life cycle of the cancer cell. This cycle consists of youth, or period of development; maturity, or period of function; and the senility, or period of degeneration, which gradually leads to death. In parenchymatous organs, like the liver and the kidney, the first period is usually completed during embryonic life or at very early age. The second period continues through the whole life of the organism, and the third period is attained at the old age of the organism or near its death. The life of an individual cancer cell, on the other hand, is very short. It changes rapidly from an embryonic into an adult and then immediately into an aged, degenerated cell, and this process takes place continually irrespective of any extrinsic aid. But in a malignant tumor the majority of the cancer cells are quickly rejuvenated before they reach senility through the fact that each cancer cell changes into two young daughter cells. When the rays arrest this proliferation, then the cancer cells without any further outside aid mature and degenerate. It is interesting to note in this connection that the life of the epithelium of the skin or testicle is nearly as short as the one of the malignant tumors, and the rays act on these organs as specifically as they do on malignant tumors.

The importance of this observation is twofold. In the first place, the morphologic appearance of radiated tumor tissue is not an absolute criterion of the therapeutic effect produced by the action of the rays on the tumor. Positive finding of the changes described above as characteristic of the action of the rays is an indication of a therapeutic result. Negative findings, on the other hand, do not preclude the possibility that the tumor was influenced by the rays. Radiated and nonradiated carcinoma tissues may have the same microscopic appearance, and still the former tissue is sterilized and may have lost to a great extent its power of proliferation and consequently its clinical malignancy. In fact, the same holds true for various malignant tumors without any relationship to radiotherapy. An epithelioma may present the same microscopic picture whether it belongs to a comparatively benign, slowly growing ulcus rodens of the face or to a highly malignant epithelioma of the lip. The second point of great practical importance to be derived from this investigation is that the radium and Roentgen rays are capable in a certain number of cases of sterilizing or inhibiting the malignancy of a tumor without destroying it. It is imperative, therefore, to subject every malignant tumor to treatment by the rays, before the performance of the radical or partial operation. The same holds true of postoperative treatment. The rays may sterilize and inhibit the proliferation of the remaining cancer cells, even if they do not destroy them outright.

119 West Seventy-First Street.—2051 Fifth Avenue.

ABSTRACT OF DISCUSSION

DR. HENRY SCHMITZ, Chicago: We must accept the dictum that the radiosensibility of cells depends on various factors. The action of radium is direct and indirect. The direct action causes degeneration of the cells whereby mitosis ceases. The indirect action is a systemic one which, as yet, we cannot explain.

Tumors arise not by the avidity of the tumor cells, but by a decrease of the avidity of the normal body cells. If the resistance of the host declines until it reaches a point where the carcinoma cells overpower the normal cells, then growth of the tumor follows. The question is whether it is not the systemic influence of the rays, that is, the indirect action, which brings about the cessation of growth of the tumors. The direct action of the rays on the carcinoma cells varies and depends on various factors—in the first place, on the specific character of the cells—the less differentiated the cell is the more radiosensitive will it be. It also depends on the age of the bearer of the cells. We know that the rays act very much more readily and intensely in the young than on adults. Cancers also are more malignant at this period. This behavior results from the fact that the cells of the young are more profusely nucleated; the blood supply is more abundant. In the aged, however, the nuclei become fewer and the blood vessels contract by a process of arteriosclerosis, as occurs during senility or decline of life. The carcinoma cannot grow as rapidly. The tumor also will react less powerfully to the rays. The radiosensitiveness of cancer also depends on the structure of the growth. A carcinoma which is very rich in connective tissue is less easily influenced by the rays than one which consists principally of cells.

The indirect or systemic action of the radium rays may result from the splitting up of the cancer cells whereby a cell protein is liberated. This in turn is followed by a leukopenia. In patients in whom we observe a favorable reaction, this negative phase is followed by a leukocytosis and lymphocytosis. Could this fact not be construed as representing an increase in the protective powers of the host and thus explain the observation of Dr. Levin that a cessation of the growth of the tumor occurred, though apparently typical carcinoma cells were found in subsequent examinations?

DR. ALFRED WOELFEL, Chicago: In another section, in which a paper on the effect of radium was discussed, the statement was made that the effect on the pathogenesis depended on the malignancy being in a state of active mitosis, as I understood it; that no effect was to be expected from radium rays unless the cells were in a state of active mitosis or unless use was made of the caustic rays. Dr. Levin, however, explains the irradiation effect as consisting of an interruption of the proliferating power of the cells. I would like Dr. Levin to explain that a little more fully. I gather from his paper that he means that the action of the rays on the pathogenesis is not limited to the time in which the cells are in an actual state of mitosis.

DR. JAMES EWING, New York: I have often observed the condition which Dr. Levin presented and which others also have observed. I do not think, however, that any of us have wanted to commit ourselves to the view that the physical treatment of cancer can rest with the production of this state of suspended animation in cancer tissue. In practically all Roentgen-ray and radium clinics there are patients who are doing fairly well, but who still have obvious signs of the disease and whose tissue shows that the tumor cells are still in an excellent state of nutrition, and sometimes with a mitotic process going on. The disease is still there but the patient is doing very well. Yet their condition is very unsatisfactory, both to the surgeon and to the Roentgen-ray therapeutist.

The tendency is to do something more for these people and to attempt to destroy these cells, and the result in most instances is unfortunate. I am inclined to think that in the treatment of inoperable cases of advanced carcinoma by physical agents we shall have to come to the conclusion that all that can be expected is to bring the tumor to the state of suspended activity described by Dr. Levin; and if we can add to the duration of life by 10 per cent. of the present expectation, we shall have accomplished a great deal. It may be that physical therapy will have to leave to other methods the final solution of this problem.

As for the direct and indirect effects of physical agents, that is a matter in which there is a difference of opinion. Until we know a good deal more about the indirect effect of the rays, we had better trust to the direct effects.

DR. ISAAC LEVIN, New York: I need not reply to Dr. Schmitz's question, since Dr. Ewing has answered it. There is no direct proof of the existence of a secondary immunizing effect of the rays on the organism, and for the present we must accept only the direct action of the rays on the malignant tumor. The pathologic and clinical evidences of malignancy do not always coincide. A pathologist cannot decide from the microscopic appearance whether the specimen is derived from an ulcus rodens or an epithelioma of the lip. Clinically, on the other hand, the former is a comparatively benign condition, while epithelioma of the lip belongs to the most malignant types of cancer. The same is true of the case of melanotic cancer described in the paper; the condition surely lost its clinical malignancy since the treatment was initiated. Still the two specimens taken before and after treatment show an identical microscopic picture.

The comparative number of mitotic figures found in a microscopic specimen is also no direct indication of clinical malignancy. There are round cell sarcomas which show under the microscope a great many mitotic figures but which are clinically comparatively benign.

The first action of the rays on the cancer cells consists most probably in the inhibition of their proliferating power without any degeneration and actual destruction of the cell. The latter follows subsequently. It is true at the same time that when this stunning, as it were, of the cancer cell is not followed by its destruction, then it may ultimately recover, and a recurrence of the tumor will take place. The same process probably takes place when the tumor recurs twenty years after a radical operation.

OILED GAUZE AND THE ABSORBING POWER OF COTTON SPONGES*

TORALD SOLLMANN, M.D.
CLEVELAND

"Nonadhering surgical gauze" was introduced by H. E. Fisher.[1] It was prepared by saturating the gauze with a soft paraffin mixture made by the addition of petrolatum, lanolin or stearic acid to paraffin. Fisher asserts especially that the blocking of the fibers prevents matting with secretions and débris; that it prevents adherence of the gauze, and that the granulations of tissue repair are not injured when the dressing is removed.

While working on paraffin bandages, I became interested in the permeability of such bandages as influenced by various waxes and oily preparations. A series of gauzes of loose and close mesh were prepared by impregnating them with paraffins of different hardness, ranging from hard paraffin to liquid petrolatum.

As the result of experiments I find that "oiled gauze," that is, gauze that is impregnated with liquid petrolatum, holds out considerable promise of usefulness. Cotton sponges wrapped in this oiled gauze absorb viscid fluids very much better than when wrapped in plain gauze; the gauze is soft and pliable; it is easily prepared, and it can be sterilized by heat after impregnation.

In the course of the investigation a loose mesh cheesecloth and a close mesh muslin were compared; it was found that the former permits much better absorption. I also used a series of mixtures of paraffins[2] for impregnating the gauzes, but found that liquid petrolatum alone is superior. This oiled gauze is prepared by dipping the cloth into the liquid petrolatum and expressing out the excess.

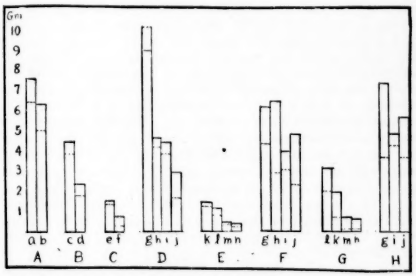
The technic of making the absorption tests was as follows:

Sponges were prepared by wrapping 1 gm. of absorbent cotton in a piece of the gauze, 12 cm. square. Egg white and egg yolk were used to simulate wound discharges. The egg white or egg yolk was placed in a flat bottom pan, in a layer perhaps 2 to 3 mm. thick; and in this were placed the sponges, which had previously been weighed. The sponges were reweighed at intervals. The results are shown in detail in the chart.

The results of the experiments may be thus summarized:

1. Sponges made of compressed cotton[3] absorb better than those made of loose cotton.

2. Sponges made with the cotton layers parallel to the surface absorb much better than those made with the layers vertical to the surface.



Absorption of fluid by sponges: The dotted line shows the grams of fluid absorbed in one hour, and the solid line that absorbed in twenty-four hours. *A* to *E* represent the absorption of undiluted egg white; *F* and *G* that of undiluted egg yolk, and *H* that of beaten egg. *A*, comparison of (*a*) compressed and (*e*) plain cotton, wrapped in cheesecloth; *B*, comparison of cotton applied (*c*) horizontally and (*d*) vertically; *C*, comparison of (*e*) cotton in muslin and (*f*) charcoal in muslin; the cotton, as in all these experiments, weighed 1 gm.; the charcoal pad contained 4 gm. of granular charcoal; *D* to *H*, comparison of treated and untreated gauze; (*g*) Stanolind cheesecloth; (*h*) 50 per cent. Stanolind cheesecloth; (*i*) plain cheesecloth; (*j*) Fisher cheesecloth; (*k*) plain muslin; (*l*) Stanolind muslin; (*m*) 50 per cent. Stanolind muslin; (*n*) Fisher muslin.

3. The sponges wrapped in loose mesh fabric absorb somewhat better than those wrapped in close mesh fabric.

4. Sponges filled with cotton absorb much better than those filled with powdered charcoal.

5. Sponges covered with gauze impregnated with liquid petrolatum absorb very much better than sponges covered with plain gauze.

6. Sponges covered with gauze impregnated with 50 per cent. liquid petrolatum are intermediate.

7. Sponges covered with gauze impregnated with Fisher's mixture do not absorb as well even as those covered with plain gauze.

8. The influence of oils, etc., on absorption is practically the same for loose mesh as close mesh gauze; and for egg albumin and egg yolk.

* From the Pharmacologic Laboratory of the Western Reserve University, School of Medicine.

* Partly supported by a grant from the Committee on Therapeutic Research of the Council on Pharmacy and Chemistry of the American Medical Association.

1. Fisher, H. E.: Nonadhering Surgical Gauze, THE JOURNAL A. M. A., March 25, 1916, p. 939.

2. The following paraffins and oils were employed: hard paraffin (Parowax brand); 20 per cent. white petrolatum: paraffin (Parowax), 80 parts, white petrolatum, 20 parts (Fisher's formula); 1 per cent. naval pitch: preceding mixture with 1 per cent. naval pitch added; 50 per cent. liquid petrolatum: equal parts of paraffin (Parowax) and liquid petrolatum; liquid petrolatum (Stanolind liquid paraffin).

3. The finished sponge was compressed in an old style letter press.

The favorable influence of the oiled gauze is explained by the protection that the oil furnishes against swelling of the thread and obstruction of the mesh.

I have not yet had the opportunity of investigating whether it is as little adhesive as the Fisher preparations; but it is certainly more favorable to absorption, and I would therefore suggest its use for dressing moist wounds.

ECLAMPSIA AND LUMBAR PUNCTURE

J. W. SNYDER, M.D.
MICHIGAN CITY, IND.

At 1 a. m., April 23, 1917, I was called seven miles from town to see Mrs. W., aged 25, with her first child. Pains had begun at 4 p. m. the preceding afternoon, and at 11:30 she had a convulsion. By the time I reached her she had had four convulsions, and a fifth quickly followed. In the intervals she was delirious, tossing about the bed. Restraint was necessary to keep her on the bed at all. On hasty examination I found the cervix dilated and the head in left occipito-anterior presentation on the perineum; but the patient seemed to be unable to deliver the child, mainly because she made no intelligent effort to aid the labor pains. Being alone, except for the assistance of an excited husband and a grandmother who could not speak English, I gave the patient ether and made a forceps delivery. When the patient recovered I gave her ½ grain of morphin, and as the convulsions were returning I ordered her removal to the city hospital, to which she was admitted at 4:30 a. m. On catheterization, 4 ounces of urine were obtained which tested over one-half albumin by volume, and also gave a decided reaction for diacetic acid. One thousand c.c. of physiologic sodium chlorid solution were given under the breast, followed in two hours by 1,000 c.c. of sterile water. Sodium bicarbonate and glucose solution were given by bowel. One-fourth grain of morphin and 1/200 grain of scopolamin were administered by hypodermic injection and repeated in two hours. Two minims of croton oil were given on the tongue.

Four hours after admission, the temperature was 102, the pulse 108 and the respirations 34. Six convulsions had occurred in the four hours' time. In the next two hours there were four convulsions more severe than those that had occurred before. The temperature went up to 105.2 by axilla, the pulse was 130, and the respirations were 36. One three-hundredth grain of scopolamin and ⅙ grain of morphin were given, and in the next hour three more convulsions occurred. At 11 o'clock the temperature was 106 by axilla, the respirations 34 and the pulse 140, very weak and irregular. The breathing was shallow and irregular, with considerable edema at the base of the lungs. The face was congested and cyanotic. As a last resort I did a spinal tap, not expecting any good, as I thought the patient would be dead inside of an hour. The spinal fluid did not seem to be under much increase of pressure, flowing slowly in drops and being perfectly clear. About 2 drams were removed and no more because I could see no reason to expect benefit from it. Before I left the room the appearance of the patient had changed. The face began to lose much of the congested appearance, and the respirations became more regular and deeper. Within one hour the temperature had fallen to 105, the respirations were 34, and the pulse was 112. No more convulsions occurred. At 2 p. m. the temperature was 103, the pulse 108, and the respirations 30, and 26 ounces of urine were removed by catheter.

From that time on the patient made a steady recovery. The temperature reached normal on the third day, and the patient recovered consciousness on the evening of that day. She had no recollection of labor or anything following. Sodium bicarbonate and glucose solution was continued by bowel for several days, and the bowels were thoroughly evacuated. The patient left the hospital, May 5, in good condition except for some necrosis at the point of giving hypodermoclysis.

This case may be only an accident, but I believe that in similar cases the procedure merits repetition. It is, of course, not a measure to remedy the toxemia, but only a means to control the convulsions. I have found a report by W. T. Wilson[1] regarding this procedure in two cases of eclampsia with beneficial results. Recently Musser and Hufford[2] reported a series in which lumbar puncture controlled the delirium of pneumonia. I believe the procedure is used also with advantage in the delirium of alcoholism and to control convulsions in meningitis.

1. Wilson, W. T.: Lumbar Puncture for the Relief of Convulsions in Puerperal Eclampsia, THE JOURNAL A. M. A., Sept. 2, 1916, p. 742.
2. Musser, J. H., Jr., and Hufford, H. K. B.: Lumbar Puncture for the Relief of Delirium in Lobar Pneumonia, THE JOURNAL A. M. A., April 28, 1917, p. 1231.

THE TREATMENT OF EPIDEMIC POLIOMYELITIS WITH IMMUNE HORSE SERUM *

PRELIMINARY REPORT

E. C. ROSENOW, M.D.
ROCHESTER, MINN.

In a previous report,[1] it has been shown that the serum of a horse, which had been immunized with streptococci isolated from the central nervous system of monkeys paralyzed with virus, had the power to neutralize virus in vitro, and to prevent poliomyelitis in monkeys following intracerebral inoculation of active virus. Moreover, this serum appeared to have a curative effect in the experimental disease in monkeys after the symptoms had begun.

Opportunity to test the effect of this serum in patients presented itself during the present epidemic of anterior poliomyelitis at Davenport, Iowa, and surrounding community. The routine procedure consists of making a spinal puncture for diagnostic tests and for relief of abnormal intraspinal pressure, and of injecting the serum. From 5 to 30 c.c. of spinal fluid are allowed to escape, depending on the age of the patient and the amount of pressure. The fluid is made to flow slowly because it is believed that rapid withdrawal might be harmful. The cell count and Noguchi's globulin test are made at the bedside, and if positive, the injection of serum is given at once. The serum is activated with complement by adding one part of fresh guinea-pig serum to nine parts of the immune serum and incubating at 37 degrees for one hour. It is then diluted with equal parts of 0.85 per cent. salt solution. The diluted serum is injected slowly into a suitable superficial vein not later than thirty-six hours after activation. Approximately 2 c.c. of the mixture are injected per minute of time. The dose is varied according to the age of the patient and severity of the symptoms. Babies from about 1 to 2 years of age are given from 3 to 7 c.c. of serum at each injection, that is, 6 to 14 c.c. of the mixture; children from 2 to 5 years of age from 7 to 10 c.c., and older individuals from 10 to 20 c.c. The injections are repeated in from eight to twenty-four hours if necessary.

Every patient in whom the diagnosis is definite, and the disease still active, is given injections of serum irrespective of the severity of symptoms. Altogether forty-four patients have been treated. Of these nine died, a mortality of 20 per cent. Of the nine fatal

* From the Mayo Foundation.
1. Rosenow, E. C.: The Production of an Antipoliomyelitis Serum in Horses, THE JOURNAL A. M. A., July 28, 1917, p. 261.

cases, six were moribund, or in a dying condition from respiratory failure at the time the serum was given, and hence should not be included as treated cases. Of the thirty-eight patients in whom there was sufficient time for the serum to act, three died, a mortality of 8 per cent. One of these was a baby 11 months old, semicomatose with spasms eight days after onset of the illness when the serum was first given. One, a boy 2 years old with cyanosis, marked tremors, high fever, severe gastro-enteritis and beginning respiratory paralysis on the second day at the time of the first injection; and one, a girl 11 years old, with high fever and paralysis of the face on the third day when the first dose of serum was given. Of these thirty-eight treated cases, twenty-two showed definite paralysis when the treatment was begun, and sixteen were in the preparalytic stage. Excepting the three fatal cases in the former group, paralysis appeared to be arrested in all but one, a boy 5 years of age, in whom a moderate paralysis developed in the left leg, the first injection of serum being given on the second day of the disease. All of the sixteen cases treated before paralysis had begun recovered without paralysis.

These results are in sharp contrast to the twenty-three untreated cases which occurred during this epidemic of which nine patients died, a mortality of 35 per cent.

The apparent good effects from the injection of serum are often striking. The headache, nervousness, restlessness and tremor often disappear promptly. The temperature and pulse rate are lowered. A beginning paralysis often disappears in an astonishingly short time. A rapidly progressing paralysis is often arrested and improvement is unusually rapid. The postparalytic pains do not appear or are comparatively mild. It is believed that the unactivated serum would do good, and that intraspinal injections might be given with benefit, but since the activated serum and intravenous injections have given the best results in monkeys, and are yielding such splendid results in patients, I have not felt justified in changing the method. Intravenous injections in this epidemic appear especially desirable because the gastro-intestinal symptoms are so pronounced.

It is, of course, realized that many more patients must be treated before conclusions can be drawn as to the exact value of this treatment. Of its harmlessness and apparent good effects, there can scarcely be any question. There is on hand enough serum to treat approximately 800 patients. Suitable quantities will be sent gratis on request to physicians or laboratories for reports of cases in localities where poliomyelitis now exists in epidemic form.

I wish here to express my very great appreciation for the courtesies extended me in the use of the Pathological Laboratory at Mercy Hospital, and of the splendid cooperation of the physicians making it possible to treat the disease in the early stages.

The Panama Canal in Switzerland.—At the meeting of the Zurich Medical Society, March 10, a lantern slide lecture on the Panama Canal was delivered by Lieutenant Lutz, who described the conquest of yellow fever and malaria, and the practical results at Panama. It is mentioned merely as an example of the internationalism of science, enthusiastic credit being paid to the Americans and to Finlay of Cuba, with comment on the inevitable failure of the French, at that stage of science, the Swiss audience, and the speaker an interned German officer.

SIMPLIFIED METHOD FOR THE PREPARATION OF CARREL-DAKIN SOLUTION

FREDERIC ROSENGARTEN
PHILADELPHIA

The preparation of neutral solution of chlorinated soda by the process described by Carrel and Dakin requires more or less chemical skill and equipment. With the proposed process nearly any one can prepare the solution without the use of chemical apparatus and within ten or fifteen minutes.

The materials and process for preparing the solution are:

1. Chlorinated soda solution, which should contain from 2.8 to 2.9 per cent. of available chlorin.

2. An approximately 5 per cent. aqueous solution of sodium bicarbonate.

3. Phenolphthalein powder.

Dilute 1 volume of the chlorinated soda solution with 5 volumes of water, add 25 c.c. of the sodium bicarbonate solution for every liter of chlorinated soda, and mix well. Now remove about 20 c.c. of the solution, add to it a small pinch of phenolphthalein, and shake gently for two minutes. If no red color appears, the solution is ready for use. Should a red color develop, add from 10 to 20 c.c. more of sodium bicarbonate to the solution, mix well, and test for free alkali with phenolphthalein as described above. Repeat the addition of sodium bicarbonate if necessary, until 20 c.c. of the solution show no red color when tested with phenolphthalein in the manner described above. A slight excess of sodium bicarbonate will probably not affect the quality of the solution.

The objection to the use of ordinary chlorinated soda solution for the treatment of wounds is that the solution almost invariably contains caustic alkali, which causes an irritation of the tissues. To overcome this, Carrel and Dakin use also sodium bicarbonate in the preparation of their solution, the sodium bicarbonate serving to neutralize any hydroxid present in the chlorinated lime. The same principle is applied in the proposed process, the only difference being that the sodium bicarbonate is added to the already prepared chlorinated soda solution. It is, however, this very difference that makes the preparation of the solution very easy because chlorinated soda solution of from 2.8 to 2.9 per cent. available chlorin is readily obtainable and keeps well when properly preserved; all that is necessary is to dilute the solution and neutralize it with sodium bicarbonate.

Since the solution prepared by the proposed process is *free of caustic alkali* and contains the same amount of available chlorin as that prepared by the Carrel-Dakin process, it is reasonable to expect that it will have the same therapeutic value.

Neither of the solutions will keep for a long time, but if we can judge from one comparative experiment carried out with each solution, the one prepared by the proposed process retains its value for a longer time than the solution prepared by the Dakin process. Thus while the latter solution containing, when prepared, 0.47 per cent. of available chlorin, showed only 0.41 per cent. at the expiration of two weeks, a solution prepared by the proposed process and also originally containing 0.47 per cent. of available chlorin still tested 0.44 per cent. after three weeks.

916 Parrish Street.

Military Medicine and Surgery

DICHLORAMIN-T IN THE TREATMENT OF THE WOUNDS OF WAR

JOSHUA E. SWEET, A.M., M.D.
Captain, Medical Reserve Corps, United States Army;
Surgeon, Base Hospital No. 10
FRANCE

It seems to be agreed that the chlorin compounds which have been derived from the old Labarraque's solution have given, in general, the best results in the treatment of the wounds of the present war.[1] I do not mean that equally good results have not been obtained by certain workers with hypertonic salt solution, or that equally good results have not been obtained by the proper utilization of the fundamental surgical principle of drainage, without the use of any antiseptic or lymphagogue whatever.

These chlorin-containing solutions, variously known as eusol,[2] Dakin's solution and Daufresne's solution, have suffered from two serious faults. They are not particularly stable, and must be prepared with care. Further, these solutions contain so little antiseptic value that they must be frequently renewed in the wound.

The latter fault has been overcome by the methods which have been devised for frequent renewal of the antiseptic solution, as often as may be necessary, without disturbing the entire wound dressing. The best known of these methods is the Carrel tube. It should be emphasized that the Carrel tube is not a surgical method in itself; it is not the essence of wound treatment; a few Carrel tubes placed in a wound will not heal the wound; the tubes must be used to convey the antiseptic frequently to the recesses of the wound. I mention this because it has seemed as though some surgeon had not quite grasped the point.

It is further quite certain that the use of the Carrel tube has led many surgeons far away from the surgical principle of free, dependent drainage, a principle established by centuries of surgical experience. Therefore we constantly find wounds constructed by the surgeon in direct opposition to the laws of gravity and surgery, wounds which do not heal kindly even when "puddled," but which would have healed of themselves if they had been given wide dependent drainage.

These facts were perfectly clear to Dakin's mind and led him to seek for a more effective chlorin compound, a compound which should contain enough available chlorin to suffice for a period of at least twenty-four hours, and which should be nontoxic and nonirritating. The first result of this study was chlormin-T (toluene-para-sulphon-sodium-chloramin) and later dichloramin-T (toluene-para-sulphon-dichloramin).[3]

Dr. Dakin asked Dr. Walter E. Lee, of the Pennsylvania Hospital of Philadelphia, and me to test the surgical value of the new preparation. Our solutions were first prepared by Dr. Byron M. Hendrix of the Department of Physiological Chemistry of the University of Pennsylvania, following Dr. Dakin's instructions, and later, by the Henry Phipps Institute of Philadelphia, through the courtesy of Dr. Paul A. Lewis of the institute. Our preliminary results have been reported,[4] but it has been my good fortune, with the United States Army Base Hospital No. 10, to test the effect of the new preparation on war wounds in a British general hospital in France. Our results with these wounds bear out our first report in every particular and further emphasize certain features of the method.

There are more things to be considered in the treatment of war wounds than the direct effect of the treatment on the wounds themselves, that is, if two methods give equally good results in wound healing, but the one methods is less painful, and effects a marked saving of time, labor and material, then the second method far surpasses the first.

It seems almost useless to me to discuss at any great length the results in regard to the wounds themselves, because probably equally good results can be obtained by the proper use of any method, so far as final wound healing is concerned; and further, surgeons are so constituted that they do not believe any other surgeon's results, anyway, until they have tested his methods for themselves — doubtless a most praiseworthy attitude of mind in a profession in which new suggestions for old and tried methods are rather numerous.

We have treated some eighty patients with Dakin's dichloramin-T; some have been old cases with foreign bodies lying in the bone, and suppuration did not stop until the foreign body was removed. Fresh cases in which the casualty clearing station has left us enough integument to permit it have been treated with dichloramin once and immediately closed and have healed by secondary intention. Sixteen cases, old and fresh, were cultured after treatment with dichloramin-T for varying periods, of which eleven gave no growth whatever; of the five in which a growth appeared, four were old cases of deep bone involvement; the only growth was the *Staphylococcus aureus* in four cases and in one case the pyocyaneus.

The wounds fill rapidly with granulation tissue of healthy color which exhibits no tendency to exuberant growth and no tendency to become water soaked and indolent; the skin edges grow in very rapidly.

These results are no different from those which can be obtained by other methods, and no one would believe them if they were any better. Let me say, therefore, that the surgeons of the unit are agreed that the wounds treated by dichloramin-T are in every way as satisfactory as they have ever seen under any method; and two of our surgeons have had previous experience in France, while all are surgeons of long experience in civil practice.

1. Makins, G. H.: Brit. Med. Jour., 1917, **1**, 789. Dakin, H. D.: Ibid., 1917, **1**, 833.

2. "Eusol" is a contraction of "Edinburgh University Solution." This is the acid hypochlorite solution advocated by Lorrain Smith. Quoting Useful Drugs, Edition 2, page 44: "The acid solution (Lorrain Smith's) may be prepared by shaking 12.5 gm. of chlorinated lime and 12.5 gm. powdered boric acid with 1 liter of water, allowing the mixture to stand for some hours, and filtering. The neutral solution (Carrel-Dakin's) is made by dissolving 14 gm. of anhydrous sodium carbonate in 1 liter of water, adding 20 gm. of chlorinated lime, shaking the mixture, after half an hour siphoning off the supernatant fluid from the precipitated calcium carbonate, filtering and neutralizing by adding boric acid (usually 2.5 to 4 gm.) until a drop of the solution does not redden a few drops of phenolphthalein solution. The alkaline preparation of hypochlorites is represented by the solution of chlorinated soda U. S. P. described below. Unless strongly alkaline, solutions of hypochlorites decompose rapidly."

3. For a description of the method of preparation of the dichloramin-T and the chlorinated oils, see Dunham, E. K., and Dakin, H. D.: Brit. Med. Jour., 1917, **1**, 865. Dakin, H. D.; Lee, W. E.; Sweet, J. E.; Hendrix, B. M., and Le Conte, R. G.: A Report of the Use of Dichloramin-T (Toluene-Parasulphondichloramin) in the Treatment of Infected Wounds, THE JOURNAL A. M. A., July 7, 1917, p. 27.

4. Dakin et al., Footnote 3.

The results along other lines are capable of more definite demonstration, and it is on these that I would lay the most emphasis.

This new dichloramin solution is made by dissolving the crystals of dichloramin-T in chlorinated eucalyptol and then diluting this solution by the addition of chlorinated paraffin oil. It is best applied by an oil spray, an ordinary hard rubber or all glass atomizer being the most practical method. Metal atomizers are not suitable, since the metal is attacked by the chlorin.

This oily solution presents the first great advantage —the dressings do not stick to the wound, and the entire act of dressing is relatively painless.

The gauze does not have to be separated from the granulations by soaking with some liquid or other. It is therefore not even necessary in the average wound to place a waterproof protective covering over the bed linen while dressing, and the necessity of moving the part or the patient is obviated. The old dressing is simply lifted off, and the wound sprayed; the force of the spray will dislodge sloughs, and the wound is covered with a fresh dressing.

It is perfectly evident that a very important saving of time results from this simplicity of dressing. One surgeon has repeatedly dressed thirty wounds in ninety minutes, an average of three minutes to each dressing. These figures and the figures to be given later refer to the acute wards, in which the patients are all bed patients.

The solution contains enough available antiseptic so that one dressing every twenty-four hours is ample for large, deep wounds, and one dressing every forty-eight or seventy-two hours is enough for the simple or more superficial wounds. Since the solution contains so much available chlorin and does not have to be renewed every few hours, the use of the Carrel tube is entirely done away with. The oily solution of dichloramin-T creeps into all the wound crevices and corners, and it can be readily introduced into sinuses by means of a cotton swab dipped into the solution.

TABLE 1.—COMPARATIVE USE OF MATERIAL, JULY 5, 1917

Wards	Gauze, 6-yd. Rolls	Cotton, 1-yd. Rolls	Treatment	No. of Patients
1	12	2.5	Eusol	23
2	10	4	Eusol	22
3	3.5	2.5	Dichloramin-T	23
4	6	2.5	Eusol	25

The amount of this new solution needed for wound dressing should be emphasized. At first thought it would seem that a solution containing oil of eucalyptus and liquid petrolatum would be far too expensive for general use in comparison with eusol. Forty-two wounds were dressed by one surgeon with 35 c.c.; another surgeon dressed 154 wounds with 115 c.c. These figures apply to the acute wards, and include many compound fractures and extensive buttock and thigh wounds. The fact that so little fluid has to be used and that therefore only the wound discharge has to be cared for results in a tremendous saving of gauze and cotton. In Table 1 are given the results of a comparison of the amounts of gauze and cotton used during different periods in the four acute surgical wards of the hospital. Each ward is in charge of surgeons of equal skill and all trained in the same hospital; the nurses are also all graduates of the same hospital training school; in other words, the comparison is not between workers trained in different schools of surgical technic.

Table 2 gives the amount of gauze and cotton used in seven days in three of the acute surgical wards. Ward 2 changed during this period from the use of eusol to the use of dichloramin-T; the figures from this ward are therefore not available. The number of patients was the same in the three wards and the proportion of relatively slight and extensive wounds in each ward was the same.

This saving of material is of importance in several ways. It effects not only a saving of labor from the cotton field to the hospital, a saving of transport, but also an important saving in the hospital itself; the time taken by the nurses in the preparation and sterilization of material can be utilized for the care of the patients, and to this can be added the saving in time, labor and material by doing away entirely with the need for the Carrel tubes.

TABLE 2.—COMPARATIVE USE OF MATERIALS, JULY 4, TO JULY 10, 1917, INCLUSIVE

Ward	Gauze, 6-yd. Rolls	Cotton, 1-yd. Rolls	Treatment
1	72	38.5	Eusol
3	33	7	Dichloramin-T
4	45	18	Eusol

The need for so little solution in wound dressing and the fact that the dressing need be sufficient only to care for the wound discharge means that the bed linen is not wet, with a consequent saving in the moving of the wounded and an increase in their comfort and well being.

The dichloramin-T solution, like all the other chlorin compounds, is a very active lymphagogue in fresh wounds, and the amount of wound excretion may be considerable. The lymphagogic effect may be directly watched in suitable wounds. As granulation tissue develops, the lymph discharge greatly decreases until the wound becomes comparatively dry. The dichloramin-T also possesses to a marked degree the characteristic power of the chlorin solutions in aiding the digestion and removal of necrotic, sloughing tissues. The new solution seems more effective in cleaning up sloughing tissue than the older chlorin compounds. While the majority of our cases come from the casualty clearing station in excellent, clean condition, a sufficient number have reached us with necrotic tissue in the wound amply to satisfy us of the rapidity with which the dead tissue is freed under the dichloramin-T. The tendency to secondary hemorrhage is certainly not increased. We have had but one secondary hemorrhage in the series, which includes a number of deep buttock wounds, and cases of exposed great arteries of the arm and leg.

The solution is not irritating to the skin or mucous membrane, except possibly in the rare individual who possesses an idiosyncrasy to the eucalyptus oil. Such individuals have been reported in dermatologic literature. Among the patients treated here we have encountered only one dermatitis; but since the dermatitis did not develop until after two weeks' use of the solution and was accompanied by high temperature, it is not clear whether it should be ascribed to the oil or to the well known action of wound excretion.

The constituents of the solution are stable, although the final combination is not indefinitely stable, nor can it be exposed to strong light. It is easily prepared from the constituents. The dichloramin-T which I have was put up in packages of 10 gm. each; the content of one package is dissolved in 75 c.c. of chlorinated eucalyptol and diluted with equal parts of chlorinated paraffin oil as needed, making,

therefore, approximately a 6.5 per cent. solution of dichloramin-T.

The first application of the solution to a fresh wound produces a smarting or burning sensation, which passes away in a very few minutes; in some individuals this seems quite severe, but I have yet to see the patient who does not prefer this slight smarting to the real pain of removing a wet dressing which has dried around the edge of the wound. After the second or third application the smarting sensation on applying the solution seems to have disappeared.

Since the time to treat an infection is before the infection starts, it is hoped that the dichloramin-T solution can be given an early trial at the field ambulance and casualty clearing stations.

CONCLUSIONS

Dakin's dichloramin-T in solution in eucalyptol and paraffin oil is therefore of great advantage in wound treatment, even if the final results in wound healing were no better, because:

1. It saves the pain of wound dressing.
2. It effects an appreciable saving of dressing material.
3. The amount of solution is of small bulk.
4. The number of wounds which a surgeon can dress in a given time is far greater than by any other method.
5. The elimination of the Carrel tube simplifies the dressing and the problem of transportation of the wounded.
6. The elimination of the Carrel tube saves the time taken by the nurse for the periodic flushing.

EQUILIBRIUM TESTS FOR AVIATION RECRUITS

CHARLES P. SMALL, M.D.
CHICAGO

Because of the unusual conditions confronted by the aviator, the physical examination of candidates for this branch of the government service is more rigid than for any other branch. Among the most important tests are those for determining the sense of equilibrium. The Bárány rotating chair, or the Jones modification of the chair is used (Fig. 1).

THE BÁRÁNY CHAIR

The essential factors in the construction of the chair are a foot-rest to allow the person examined to be revolved freely with his feet resting on the foot-rest, a few inches above the floor; a head-rest to hold the head firmly at the desired angle; a stop catch by which the examiner by pressing with his foot can instantly bring the rotating chair to a stop; and a long arm extending upward behind the chair at a slight angle, by means of which the examiner is able to rotate the chair easily. Before making the tests it is well to have the applicant's ears examined to see that there is no impacted wax in the external auditory canals, also to ascertain the condition of the eustachian tubes, that is, whether or not they are patulous. Applicants are advised to eat a very light luncheon before having this examination, as nausea and vomiting occasionally follow the test.

METHOD OF EXAMINATION

The examiner is provided with a stop-watch. The applicant sits with eyes closed and his feet on the foot-rest; his head is against the head-rest tilted at an angle of about 30 degrees. The chair is rotated ten complete revolutions toward the right in exactly 20 seconds. The chair is then brought to a sudden stop and the applicant is told to open his eyes and look straight in front of him at some distant object. If his horizontal canals are functioning normally, there will be a lateral nystagmus, to the left, continuing for about 25 seconds, although a variation of 10 seconds below or beyond this time is allowable. The process is then repeated, turning the chair this time to the left, which will produce a nystagmus to the right.

THE POINTING TEST

The "pointing test" is next made, as follows: The examiner stands directly in front of the chair, and the applicant sitting erect with his eyes blindfolded is told to extend his right arm directly in front of him and with his forefinger touching the finger of the examiner held at that point. The applicant is now told to raise his arm above his head and quickly bring it down again to exactly the same spot, that is, to touch the examiner's finger when he brings his arm down. He is then made to do the same thing with his left arm.

The Bárány chair

The applicant now assumes an easy position with his arms resting on the arms of the chair; the chair is rotated rapidly to the right, ten times in 10 seconds. The instant the chair is brought to a stop, the examiner again holds his finger in contact with the applicant's right forefinger directly in front of him, and the applicant is again told to raise his arm and quickly bring it down to touch the examiner's finger. In the normal condition the applicant will not touch the finger, but will "past point" several inches to the right of it. On repeating the movement he will again point to the right and usually even on the third attempt. Any further repetitions of the movement should show a restoration of the normal equilibrium, and the finger drop in the right direction. The test is then repeated, rotating the chair this time to the left, when the finger should "past point" to the left in the same way. The "falling test" is now made, to ascertain the condition of the vertical canals. The applicant bends his body forward at an angle of 90 degrees, his eyes still blindfolded, and his head resting on his fists held on his knees. The chair is rotated rapidly toward the right, ten times in 10 seconds. The instant it is brought to a stop the applicant is told to sit straight up. If normal he will fall toward the right side. Assuming the same bent position again, he is rotated toward the left in the same way, and on attempting to sit up straight, he will fall to the left side. The rotation method is now used exclusively in examining the sense of equilibrium, having superceded the caloric method as being more rapid, easier in application and more exact in determining the integrity of the entire vestibular function.

25 East Washington Street.

PROMPT REMOVAL OF FOREIGN BODIES IN GUNSHOT WOUNDS

ARGUMENTS IN FAVOR

KELLOGG SPEED, M.D.
Major, Medical Reserve Corps, United States Army
FRANCE

Coming back into the field of military surgery after an absence of several months, during which interval the lessons of experience have matured, I feel compelled to make an academic statement concerning early removal of foreign bodies in many gunshot wounds. In the service of the British expeditionary forces during 1916 I had the opportunity of caring for thousands of wounded men. This year, returning to the same field in the service of our own United States, and having earned the right, in part, to make general observations, the advantage of early foreign body removal strikes me most forcibly.

With the advancement of the stress of war, the increase of its countless thousands of wounded men and the refinement of efficiency and cruelty of gunfire, the services rendered by the medical corps have progressed favorably. By that I mean not so much the efficiency of individual medical officers, nor the far-seeing arrangements of general officers governing corps movements, as I do the application of simpler methods, the multiplication of excellently equipped casualty clearing stations near the line and the more active immediate treatment by qualified surgeons.

In the first eighteen months of the war, although stupendous efforts at organization of the various medical corps were put forth, and although the results were correspondingly satisfactory, the general outcome fell short of the idealism of surgical work. It was of necessity so. Medical men had to become accustomed to the work in hand, weigh it in the light of their previous experience, and observe results after many methods and months of waiting. That period passed with a lower mortality and a happier general result than any other great war has shown. New infections were encountered and studied, and their untoward results checked. Tetanus was quite firmly controlled in spite of its all-pervading possibilities in trench war.

If methods have improved, if such dreaded infections as gas gangrene are known, if tetanus can be controlled, may we not look to even better results by considering the larger problems of the medical service? Laying aside sanitation, sick men and medical disease, and dealing with wounded men and their recovery, what have we to consider? First, there is the method of gathering up the wounded, and their transportation to comfort and medical aid; secondly, the nearness of high surgical aid and its character, and lastly, the transportation to bases and home lands of the seriously wounded, and return to the firing line as soon as possible of the largest percentage of men for continued service.

When one comes to observe the expanded system of care, comfort and transportation of the wounded from the battlefield, one cannot fail to feel a deep and respectful admiration for its thoroughness. At present it is about the last word on the subject. The expansion of close lying casualty clearing stations, both in number and in capacity, with the personnel better qualified to perform rapid, clean, conservative war surgery, leads me to the points I wish to elaborate, under the second and last heading mentioned.

With the equipment now at hand, it seems best to remove nearly all foreign bodies remaining in the tissues after gunshot as soon as conservatively possible. No discussion is entered into here about subsequent treatment, methods of irrigation, drainage tubes, bismuth iodoform petrolatum paste,[1] or types of dressings. Why should this prompt method be advocated and what are its limits?

It is commonly known that some foreign bodies, especially small ones, will remain in well vascularized, tissues, become encapsulated and cause no harm. That is a fact. On the other hand, take a half million instances of gunshot wounds. Without being able to give any reliable statistics, one may believe that a large proportion of them go on to suppuration, to indications for removal of the foreign body for that reason alone, or for pain or functional interference.

Suppuration, drainage, convalescence, late secondary operations after return to service, with all the handling and expense incident thereto, are a drag on resources. Could not an appreciable portion of this outlay be curtailed by prompt removal of foreign bodies? Because wounded men are rapidly conveyed to casualty clearing stations, there foreign bodies should be removed — with restrictions — so that the wounded may then, within a few hours for the most part, be on the first step to recovery. If suppuration follows, its course is shorter — the foreign body is out. There is far less likelihood of serious gas or other infection. More lives are saved. Time, dressings, the number of the medical corps assistants, transportation expense and home hospitals are curtailed, and a larger proportion of wounded men can be retained near the active field forces and sent back without home travel. One need only enumerate various complications which might be partly obviated. Long draining, secondary sinuses from tissues — foreign bodies lying within — secondary hemorrhages, and finally the psychologic effect on men who carry in their bodies these retained pieces of metal are avoided.

Let me cite some of the incidents of a day's work:

The first man had been shot sixteen months before, a small piece of shell entering the anterior aspect of the thigh. The foreign body had been located by means of the Roentgen ray, and was known to be present; but because it lay deeply near the femur and was small, causing no suppuration, removal was never attempted. The patient had worried so much about this that he finally had to be sent down to the base, complaining of great pain in the foot and the leg. I removed the body, cleanly encapsulated just in front of the femur. Great satisfaction and relief of all symptoms followed.

A second man was shot through the deltoid region. He had no marked symptoms, no bone, blood vessel or nerve injury, and was immediately sent on to the base with a dressing. In twenty-four hours a gas infection developed, and in spite of amputation, death followed quickly. Possibly extraction and drainage at the time of reception in the casualty clearing station would have saved his life.

Another instance of gunshot penetration of the knee joint may be cited. It had a small wound of entrance. Exploration arthrotomy was performed as soon as the patient was received. The joint was found transversed, was washed out with saline solution, and after removal of the foreign body the synovial membrane was closed snugly. The external wound was trimmed and sutured, and a small drain inserted

1. This is a paste much in vogue at the present time for smearing into wounds, followed by tight closure. It is sometimes referred to in English literature as bismuth iodoform paraffin paste, or B. I. P. P. Hence "bipp" and the verb "bipped."

to the closed capsule. Splint and extension were applied. Recovery followed with a useful knee joint.

Why should not all gunshot wounds be thus treated? Some cannot be, of course. Loss of blood, shock, anatomic inaccessibility, and perhaps a rush of work forbid. The first three named reasons may be adequate — the last not.

In all instances of gunshot injury with retained sizable missiles except those to be classed with complications of loss of blood, shock (anesthetic contraindication) and anatomic inaccessibility, it is suggested, because of the reasons outlined, that prompt removal be adopted.

THE VENEREAL DISEASES

BALANITIS GANGRENOSA

EROSIVE OR GANGRENOUS BALANITIS

(*Continued from page 1005*)

NOTE.—*This is the third of a series of four articles on the management of venereal diseases with special reference to military practice. The first article on "The Diagnosis and Treatment of Syphilis" appeared September 15, p. 907. The second article on "Chancroid" appeared September 22, p. 1004. The articles have been prepared under the direction of the Surgeon-General by the Advisory Committee on Venereal Diseases, Dr. William Allen Pusey, Chicago, chairman; Dr. Francis R. Hagner, Washington, D. C.; Dr. Grover W. Wende, Buffalo, Dr. Sigmund Pollitzer, New York, and Dr. Henry H. Morton, Brooklyn, with Lieut.-Col. F. F. Russell in charge of Infectious Diseases. The series is published with the permission of the Surgeon-General, and will include the following: Treatment of Syphilis; Chancroid; Balanitis Gangrenosa; Acute and Chronic Gonorrhea, with its complications. The complete series will be issued in the form of a manual.*—ED.

In connection with chancroid attention is called to this venereal infection, which while rare is important, because of its destructive course, if unrecognized and treated as chancroid.

Balanitis gangrenosa begins as small whitish patches of superficial ulceration which are situated either in the coronary sulcus or on adjacent parts of the glans or prepuce. These excoriations increase in size and produce superficial, small, round ulcers which from coalescence form larger circinate ulcers. These ulcers are covered by a closely adherent necrotic pellicle, and are surrounded by an inflammatory border. The base of the ulcer bleeds readily when the pellicle is detached. The disease invariably occurs under a long prepuce, and when the process becomes well established the prepuce becomes edematous and phimosis usually occurs. There is a free discharge of very offensive thin, yellowish or brownish pus. This superficial form of the disease may get well spontaneously or as the result of treatment, but it is likely to develop into the gangrenous form. An intense edema of the penis develops and a black slough forms in the affected area. If the ulcer is situated on the prepuce, the dark area becomes visible from without. The slough perforates the prepuce and the glans often projects through the opening thus made. If the ulcer is on the glans itself, rapid destruction of it takes place. The whole glans may be destroyed in a few days. Following this, the gangrene spreads to the shaft of the penis, and partial or complete amputation may result. With the gangrenous form the discharge is yellowish or brownish, and is more offensive than in the less severe affection.

In both the erosive and gangrenous forms there is lymphangitis and enlargement of the inguinal glands, but, unlike the course of chancroid, the glands do not suppurate. In both erosive and gangrenous balanitis the parts are extremely tender. Urination is not painful unless the phimosis is such that, in urinating, the urine is dammed back and distends the prepuce.

In erosive balanitis systemic symptoms are trivial or absent. In the gangrenous form there is some sepsis, but in view of the intensity of the infective process it is usually comparatively slight. The patients are indisposed and have slight fever. Occasionally the symptoms are acute, with the temperature reaching 103 or 104 degrees.

ETIOLOGY

The disease is an infection caused by a symbiosis of organisms identical with those found in Vincent's angina and noma. Matzenauer contends that the same infection also produces hospital gangrene. Tunnicliffe, from her studies of Vincent's angina, believes that the spirillum and the vibrio are different forms of the same organism, and that the infection is not a symbiosis, but is due to one organism which under different conditions shows different forms.

The vibriones occur as curved rods with pointed ends, and are about 2 microns long and 0.8 of a micron in diameter. They stain with most dyes and are gram-positive if declorization is carefully done with 70 per cent. alcohol. The spirilla have loose, wavy spirals, and are 6 to 30 microns long, and 0.2 of a micron broad. They travel rapidly by quick back and forward snake-like motions. They are gram-negative, stain with most dyes, but are best examined under the dark field illuminator. The vibriones may be cultivated on serum agar. They are anaerobic, and in the lesions occur abundantly in the deeper part of the necrotic tissue. The spirilla are less abundant and are found more superficially in the lesions. Both are demonstrable in the tissues of the lesion, in the neighboring affected glands, and in the blood vessels.

The organism in the spirillar form occurs as a saprophyte in the mouth. It is only pathogenic when vibriones are also present and under anaerobic conditions, or under conditions of greatly lowered resistance. On the penis it only causes infection when protected from the air by a long prepuce. The infection of the penis is believed to occur from saliva. The affection is a disease of the vagabond class, and it is not extremely rare in public venereal clinics.

DIAGNOSIS

The most characteristic features of the affections are: the presence at or near the corona of the erosive or gangrenous lesions; the peculiarly bad-smelling purulent discharge; the occurrence under a long foreskin; and the presence in the secretion of vibriones and spirilla. In the severe gangrenous cases the rapidly spreading gangrene is very characteristic. The lesions are usually mistaken for chancroids. In balanitis gangrenosa there is a more intense inflammatory reaction, more edema of the prepuce, and more marked phimosis than in chancroid. The indolent glands are enlarged, painless, and do not suppurate as they almost invariably do in chancroid under a long prepuce. In chancroid, vibriones and spirilla are absent.

The lesions do not resemble an uncontaminated chancre, but, as in chancroid, a mixed infection with syphilis may occur and be entirely masked. In the case of mixed infection, the *Spirochaeta pallida* can also be demonstrated in the secretion.

Early diagnosis is of great importance, for a delay in proper treatment for a few hours may mean extensive spread of gangrene.

TREATMENT

The essential fact in the treatment of the condition is to expose the lesions so that oxygen can reach them. Otherwise their spread cannot be controlled. The prepuce should be opened by a dorsal slit, so that the glans is completely uncovered. Then the parts should be kept clean by washing with dilute hydrogen peroxid solution. The best procedure is to keep the parts continually moist either with wet dressings or by continuous irrigation with dilute hydrogen peroxid solution. If this cannot be used, the parts should be frequently irrigated with a bland antiseptic solution and left exposed to the air without dressings. With the use of 2 per cent. hydrogen peroxid solution healing is rapid.

(*To be continued*)

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION. W. A. PUCKNER, SECRETARY.

DICHLORAMINE-T, ABBOTT. — Paratoluenesulphonedichloramide.—$CH_3.C_6H_4.SO_2NCl_2$.—The dichloramide of paratoluenesulphonic acid, $CH_3.C_6H_4.SO_2OH$.

Actions and Uses.—Dichloramine-T, Abbott is said to be a powerful germicide, acting much like the monochloramine chlorazene, but capable of being used in solution in eucalyptol and liquid petrolatum, thus insuring a gradual and sustained antiseptic action. As in the case of chlorazene, dichloramine-T, Abbott is said to act essentially like the hypochlorites, but to be less irritating to tissues. Dichloramine-T, Abbott should not be administered internally.

Dichloramine-T, Abbott is claimed to be useful in the prevention and treatment of diseases of the nose and throat; it has been used with success as an application to wounds.

Dosage.—Dichloramine-T, Abbott, dissolved in chlorinated eucalyptol-Dakin and chlorinated paraffin oil-Dakin (which see), is used in concentrations of 2 to 10 per cent. When used as a spray a 10 per cent. solution of dichloramine-T, Abbott, in chlorinated eucalyptol-Dakin, is mixed with four times its volume of chlorinated paraffin oil-Dakin. For application to infected wounds a 10 to 15 per cent. solution of dichloramine-T, Abbott, in chlorinated eucalyptol-Dakin, is mixed with one-half to twice its volume of chlorinated paraffin oil-Dakin. (The solution of dichloramine-T, Abbott in eucalyptol is fairly stable, but the dilutions of this with chlorinated paraffin oil-Dakin should be prepared freshly when wanted.)

Manufactured by the Abbott Laboratories, Chicago. No U. S. patent or trademark.

Paratoluenesulphonedichloramide was introduced into medicine by H. D. Dakin and co-workers under the name "Dichloramine-T." It is prepared by chlorinating paratoluenesulphoneamide with subsequent purification (JOURNAL A. M. A., July 7, 1917, p. 27).

Dichloramine-T, Abbott is a pale yellowish crystalline powder, having a strong chlorous odor. It melts at 78 to 83 C. It is insoluble in water, soluble in chloroform and benzene, soluble with difficulty in petroleum ether, slightly soluble in liquid petrolatum and soluble in eucalyptol.

Strong mineral acids liberate chlorine from dichloramine-T, Abbott. It reacts with most substances, such as acids, alcohol, hydrogen peroxide, amines, certain metals, etc. It liberates bromine from bromides and iodine from iodides in neutral solutions.

If 15 Cc. of a saturated aqueous solution of anilin is treated with 0.05 Gm. of dichloramine-T., Abbott, the solution acquires a brownish-red color, which becomes deep blue upon supersaturation with ammonia water.

Two Gm. of dichloramine-T, Abbott are treated with 10 to 15 Cc. of concentrated hydrochloric acid and heated to dryness. The residue is dissolved in a mixture of 1 part alcohol to 1 part water, and an excess of sodium carbonate added. The alcohol is removed by evaporation, and the cooled solution (with considerable insoluble material) is placed in a separating funnel and shaken with chloroform. The chloroform is drawn off, evaporated, the residue dissolved in smallest amount of cold chloroform, and then treated with an excess of petroleum ether. A white precipitate is formed, which, after drying, melts at 134 to 136 C. (Pure paratoluenesulphoneamide melts at 137 C.)

If 0.1 Gm. of dichloramine-T, Abbott is treated with a few drops of sulphuric acid, chlorine is evolved but no blackening occurs (readily carbonizable matter).

One Gm. of potassium iodide is dissolved in about 20 Cc. of glacial acetic acid, and any iodine set free is reduced by the careful addition of sodium thiosulphate solution. About 0.1 Gm. of dichloramine-T, Abbott (accurately weighed) is then added and titrated with tenth-normal volumetric sodium thiosulphate solution. The available chlorine content should not be higher than 31 per cent. or lower than 28 per cent. Each Cc. of thiosulphate solution is equivalent to 0.0177 Gm. of chlorine.

CHLORINATED EUCALYPTOL-DAKIN. — Eucalyptol, chlorinated at ordinary (room) temperature.

Actions and Uses.—Chlorinated eucalyptol-Dakin is used as a solvent for dichloramine-T.

Dosage. — Solutions of dichloramine-T in chlorinated eucalyptol-Dakin should preferably be made as required and without the use of heat. If kept in the dark, stock solutions may be used for thirty days.

Prepared by the Abbott Laboratories, Chicago. No U. S. patent or trademark.

Eucalyptol is treated with potassium chlorate and strong hydrochloric acid. After standing twelve hours at room temperature, the eucalyptol is washed, first with water and then with sodium carbonate solution. Dry sodium carbonate is then added to the chlorinated eucalyptol and this allowed to stand for twenty-four hours. The chlorinated eucalyptol is filtered and dried by addition of calcium chloride (JOURN. A. M. A., July 7, 1917).

Chlorinated eucalyptol has the color and odor of eucalyptol.

CHLORINATED PARAFFIN OIL-DAKIN.—Liquid petrolatum, chlorinated at ordinary (room) temperature.

Actions and Uses.—Chlorinated paraffin oil-Dakin is used as a diluent for solutions of dichloramine-T, in chlorinated eucalyptol-Dakin.

Dosage. — Solutions of dichloramine-T in chlorinated eucalyptol-Dakin and chlorinated paraffin oil-Dakin are unstable, and should not be ever four days old. In any instance they should be discarded as soon as a distinct precipitate appears.

Prepared by the Abbott Laboratories, Chicago. No U. S. patent or trademark.

Liquid petrolatum is treated at room temperature with potassium chlorate and strong hydrochloric acid, exposed to bright day light and allowed to stand over night. The chlorinated product is then washed with water, sodium carbonate solution and the oil drawn off, shaken with calcium chloride and charcoal and filtered (JOURN. A. M. A., July 7, 1917).

Chlorinated paraffin oil-Dakin has the general physical properties of liquid petrolatum.

HYCLORITE.—A solution of chlorinated soda, each 100 Gm. of which is stated to contain sodium hypochlorite 4.05 Gm., sodium chloride 3.20 Gm., calcium hydroxide 0.25 Gm., inert salts 0.92 Gm. It contains not less than 3.85 per cent. available chlorine.

Actions and Uses.—Hyclorite has the action and uses of solution of chlorinated soda, U. S. P., but its available chlorine content is greater. One volume of hyclorite diluted with 7 volumes of water has the same available chlorine content as neutral solution of chlorinated soda, and is isotonic.

Dosage.—Hyclorite is used full strength or diluted with 1 or 2 parts of water for direct application to mucous membrane, muscular tissue, bone infections, etc. For irrigation of wounds, throat and body cavities dilutions of 1:100 to 1:1,000 are used. For use in the irrigation method of treating infected wounds dilute 1 part of hyclorite with 7 parts of water.

The available chlorine content of hyclorite decreases at the rate of about 12 per cent. per year. In order that due allowance for this decrease may be made when diluting for use, each bottle of hyclorite bears the date of bottling.

Manufactured by the General Laboratories, Madison, Wis. No U. S. patent. U. S. trademark applied for.

Hyclorite is prepared by decomposing chlorinated lime suspended in water with sodium carbonate and adding to the solution obtained, a freshly prepared solution of electrolyzed sodium chloride.

Hyclorite has the properties of solution of chlorinated soda, U. S. P., but contains no carbonate. When exposed to air a pellicle forms on its surface due to the formation of calcium carbonate.

About 10 Gm. hyclorite are weighed and transferred to a dish with about 100 Cc. of water and an excess of pure ammonium hydroxide solution is added. After about one-half hour the solution is evaporated to complete dryness on a water bath. To the residue is added about 50 Cc. of water, 2 drops of methyl orange test solution and an excess (measured) of tenth-normal hydrochloric acid volumetric solution and then the residual acidity determined by titration with tenth-normal sodium hydroxide volumetric solution. The alkalinity found corresponds to not more than 0.25 Gm. calcium hydroxide per 100 Gm. of hyclorite. Each Cc. of tenth-normal hydrochloric acid volumetric solution consumed corresponds to 0.0037 Gm. $Ca(OH)_2$.

Mix in a flask about 5 Cc. of hyclorite, accurately weighed, with 50 Cc. of distilled water, add 1 Gm. of potassium iodide and 5 Cc. of acetic acid and titrate with tenth-normal sodium thiosulphate volumetric solution, starch test solution being used as indicator. It shows not less than 3.85 per cent. available chlorine.

Each Cc. of tenth-normal sodium thiosulphate volumetric solution used corresponds to 0.003546 Gm. of available chlorine. Due allowance should be made for the decrease in available chlorine content of about 12 per cent. per year, date of bottling being stamped on each bottle.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

535 NORTH DEARBORN STREET . . . CHICAGO, ILL.

Cable Address . . . . "Medic, Chicago"

Subscription price . . . . . Five dollars per annum in advance

Contributors, subscribers and readers will find important information on the second advertising page following the reading matter

SATURDAY, SEPTEMBER 29, 1917

EXPERIMENTAL PELLAGRA

An important advance in the study of that perplexing disease, pellagra, has been made in the discovery by Chittenden and Underhill[1] of Yale University that symptoms closely resembling those found in human subjects can be induced experimentally in dogs. As may be anticipated, diet plays the dominant part in initiating the pellagra-like condition. When the animals are fed on a ration consisting of boiled dried peas, cracker meal and cottonseed oil or lard, they rapidly develop symptoms indicating abnormal nutrition. Unless definite changes in the food are made, this condition eventually terminates in death.

The pathologic manifestations which attend the usually quite sudden onset of the symptoms center especially along the alimentary tract. A foul mouth and bloody diarrhea are accompanied by hemorrhagic conditions in the lower bowel. There may be ulcers in the duodenum, particularly in those animals which die with exhibition of nervous symptoms, such as convulsions. Thus there is much to remind one of the alliterative description of pellagra as a sequence of "diarrhea, dermatitis, delirium and death."

The hasty interpreter might be inclined to attribute the failure of dogs to thrive on the exclusive vegetarian diet mentioned to the low level of nitrogen intake which usually characterizes such dietaries. So far as the mere quantity of protein involved is concerned, this appears not to be the case. Chittenden and Underhill insist that the pellagra-like outcome cannot be ascribed to a diminished nitrogen intake, to an inability to maintain nitrogen equilibrium, or to poor utilization of nitrogen and fat. The partition of the nitrogenous waste products in the urine is normal when compared to that of animals maintained on the same level of nitrogenous intake.

Equally important with the ability to initiate a condition of experimental pellagra is the finding that the pathologic appearances exhibited by dogs on these exclusive vegetable diets can be made to disappear and that the normal nutritive rhythm can be reestablished by the addition of meat to the dietary. This reminds one, of course, of the comparable experience of Goldberger and others in the management of human pellagrins. The Yale investigators note that in the production of the symptoms it is immaterial whether the transition from a diet containing meat to one of purely vegetable origin is sudden or gradual. The final outcome is said to be the same.

It is of further moment that under suitable conditions these nutritional disturbances may be manifested even when raw meat is included in the diet. By quantitative variations in the food intake the condition is reported to be produced in varying periods of time ranging from one month to six or eight months. Strangely enough, a large intake of peas appears to be less detrimental to dogs than smaller quantities. Chittenden and Underhill remark that if one assumes that the untoward symptoms are induced by a lack of some essential substance or substances of the so-called "vitamin" class, these results may be interpreted to indicate that boiled peas contain a small quantity of these essential substances, too small, indeed, to maintain life for prolonged periods when the intake of boiled peas is below a certain quantity, but capable of prolonging life greatly when large quantities are ingested.

We have recently voiced the necessity of caution in the interpretation of pellagra and related manifestations of nutritive disorder on the basis of a deficiency of vitamins.[2] McCollum and Pitz[3] of the University of Wisconsin have lately urged that "there is no reason whatever why we should assume, as Voegtlin, Goldberger, Funk and others have done, that pellagra is due to a lack of a specific unidentified dietary factor, a 'vitamin'." They are inclined to the belief that an improper amount and character of the inorganic constituents of the diet, proteins of poor quality taken regularly at low planes, and an inadequate supply of fat-soluble vitamin (such as is found in butter fat rather than in lard or cottonseed oil) have contributed to nutritive failure in all the diets described by Goldberger and his associates as being employed by peoples where the incidence of pellagra is high.[4]

Apart from any hypothesis of etiology, the facts developed experimentally by Chittenden and Underhill[1] are of great importance because they afford another scientific method of attacking the pellagra problem. Their observations give added evidence of the inferior value of the proteins of legumes such as peas and beans. One further conclusion of these recent investigators should not be overlooked, in view of the debate which has centered about it in the past. They assert that infection plays no part in the produc-

1. Chittenden, R. H., and Underhill, F. P.: The Production in Dogs of a Pathological Condition Which Closely Resembles Human Pellagra, Am. Jour. Physiol., 1917, **44**, 14-67.

2. Vitamin Deficiency and Disease, editorial, THE JOURNAL A. M. A., Sept. 8, 1917, p. 826.

3. McCollum, E. V., and Pitz, W.: The "Vitamine" Hypothesis and Deficiency Diseases: A Study of Experimental Scurvy, Jour. Biol. Chem., 1917, **31**, 229.

4. Goldberger, Joseph: Pellagra Causation and a Method of Prevention, THE JOURNAL A. M. A., Feb. 12, 1916, p. 471.

tion of the abnormal nutritive conditions of dogs as just described. Their verdict is that failure of dogs to thrive on the selected vegetable diet must therefore be ascribed to the character of the food. Let enthusiasts beware, however, from associating pellagra with vegetarianism per se. A ration of peas, wheat and cottonseed oil is not the ideal of the vegetarian regimen.

THE KIDNEYS IN DIABETES INSIPIDUS

Only a few years ago the chronic polyuria that was formerly referred to under the uncharacteristic designation of diabetes insipidus was regarded as a comparatively rare malady. The advance of clinical medicine has, however, brought to light an unexpected number of cases, some of which have been subjected to careful study with the aid of the newest methods of science. Although the pathogenesis of the disease is still decidedly debatable and many observers are inclined to associate it in some way with the central nervous system, other competent investigators have championed the hypothesis that chronic polyuria is primarily the result of a disease of the kidney.[1]

One salient characteristic of the disease is the inordinately low specific gravity and the enormous volumes of the urine. It has been maintained by those who incline to the kidney factor as the determining agency in the disease that the kidneys of affected patients are not able to alter the concentration of the urine. This has been denied, however, for some patients at least, by a number of observers, the most recent being Christie and Stewart[2] of Lakeside Hospital, Cleveland. In a study of the therapeutic effect of pituitary posterior lobe extract they found the kidneys in a typical case to have the power of effecting a very considerable concentration of the urine under the influence of the drug. Kidney functional tests gave a normal response; and no indication could be obtained that the chronic polyuria was in any way associated with a pathologic alteration in the kidney. It may be added that histologic examination of the kidneys in diabetes insipidus lends no support to the view that the condition is due to any structural alterations in these organs. With respect to the mode of action of the gland extract, the blood flow in the hands seemed to be increased during the antidiuretic action of posterior lobe extracts. This is taken by Christie and Stewart to support the view that a vascular effect in the opposite direction on the renal vessels may be responsible for the diminution in the secretion of urine.

Some time ago we called attention to the current view as to how the excretion of water in general by the kidneys is regulated.[3] When the relative volume of the blood serum is increased by the drinking of water, the serum becomes more dilute as regards salts, and therefore has a diminished specific conductivity. The latter change has actually been measured.[4] The Cleveland observers have taken the opportunity offered by the extreme changes in secretory activity in chronic polyuria to measure the relative volume of the serum. It was found, in accord with predictions, to be detectably diminished when the water excretion was lessened by posterior lobe extract or by restriction in the intake of water.

THE SPRAYING OF GARDEN CROPS AND THE PUBLIC HEALTH

Modern agriculture has come to depend more and more extensively on the use of insecticides and fungicides in combating some of the menaces that arise in the growing of farm products. These weapons against the enemies of agriculture include, in addition to poisons of organic nature, salts of lead, arsenic, and copper. The spraying of growing forms of vegetable life with solutions of such poisonous substances at once suggests the possibility of danger not only to live stock which may eat grass on which the spray has dropped, but also to the human consumer of garden products that have been subjected to remedial treatment. The list includes some of the common vegetables, fruits and berries which have been sprayed either to overcome an insect enemy that attacks them or some organism that infests vegetable life in their vicinity. Cabbages and lettuce, for example, may be sprayed to protect them from destruction by damaging organisms; whereas apples may become exposed to insecticides because the latter are used to combat an invasion of the orchards by insect pests, like the browntail moth, which are concerned with the foliage rather than with the fruit of the tree. Indeed, orchards in some states were being sprayed with arsenate of lead, in August, with this end in view.

The question has thus naturally arisen as to the possible danger to persons eating fruit from trees sprayed at this time in the growing season, especially in the case of early fruit, which would be nearly or quite ripe at the time the trees were sprayed. Obviously a copious rainfall tends to decrease the amount of poison remaining adherent to the edible products; but rain is not a dependable agent for the eradication of danger. The New Hampshire Agricultural Experiment Station has conducted extensive investigations in the past few years on the residues of lead arsenate on fruit and vegetables after sprayings

1. Meyer, E.: Deutsch. Arch. f. klin. Med., 1905, **83**, 1; Ztschr. f. klin. Med., 1912, **74**, 352. Mosenthal, H. O.: Renal Function as Measured by the Elimination of Fluids, Salt and Nitrogen, and the Specific Gravity of the Urine, Arch. Int. Med., November, 1915, p. 733. The Cause of Chronic Polyuria, editorial, THE JOURNAL A. M. A., June 14, 1913, p. 1884.

2. Christie, C. D., and Stewart, G. N.: Study of a Case of Diabetes Insipidus with Special Reference to the Mechanism of the Diuresis and of the Action of Pituitary Extract on It, Arch. Int. Med., July, 1917, p. 10.

3. Excretion of Water by the Kidneys, editorial, THE JOURNAL A. M. A., Nov. 25, 1916, p. 1604.

4. Wilson, T. M.: Am. Jour. Physiol., 1905, **13**, 150; Haldane, J. S., and Priestley, J. G.: Jour. Physiol., 1916, **50**, 296. Priestley, J. G.: Ibid., 1916, **50**, 304.

with this widely used insecticide.[1] In the case of apples, the report points out, the maximum amount of the poison that may be expected to occur on the fruit in the ordinary course of events would not exceed 0.5 mgm. per apple. However, as much as 5 mgm. has been found on the surface of an apple after direct spraying with the poison. It is pointed out that such fruit would surely attract attention and in picking and handling would lose a material part of this residue, even if no rains intervened. It is believed, therefore, that under ordinary conditions no apples will reach the consumer carrying such amounts of arsenate of lead per fruit that a healthy human adult can eat enough at one time to cause fatal poisoning. Nevertheless experiments by Carlson and Woelfel at the University of Chicago have shown that lead arsenate, used as an insecticide or spray on fruit trees, is sufficiently soluble in human gastric juice to cause lead and arsenic poisoning. Measures must, therefore, be taken to remove this spray from the fruit. As Carlson has written, from the standpoint of public health rather than of the toxicologist, the question is not how much of the poison may be ingested without producing acute or obvious chronic symptoms, but how completely man can be safeguarded against even traces of the poison. Even extremely small doses of protoplasmic poisons when repeated may gradually produce deterioration and disease.

In the case of small fruits, such as the berries, the possibility of danger is even greater. In the case of the strawberry, to cite an instance investigated in New Hampshire, the surface of the fruit is of such a nature that larger amounts of the poison may be retained and quite possibly may escape notice. These residues also would be less likely to be rubbed off in handling and probably would wash off less rapidly. One portion of strawberries, consisting of one-fourth quart of the berries, may carry as much as 8 mg. of oxid of arsenic. This would probably seldom or never constitute a dangerous dose for an adult person in good health, but it might for a child or for an adult in weakened condition. It seems imperative, therefore, that strawberries fully formed or nearly so should not be directly sprayed with arsenate of lead, unless they are to be thoroughly scrubbed before using. Similar conclusions apply to currants, blackberries and other "small fruits."

The green vegetables which often require treatment by spraying are likewise not exempt from some degree of menace. A whole head of cabbage and lettuce directly sprayed and used without removal of outer leaves, may carry a relatively large amount of the poison. We are told that arsenate of lead should be applied only lightly and sparingly to cabbage or to lettuce that is ready for market. If these vegetables are sprayed the outer leaves should be removed and the heads should then be washed. If this is done, it is believed that there is no danger that these vegetables will carry to the table an amount of arsenic involving a dangerous dose for a human being. The well known experiences of cumulative effects with metallic poisons of the type here discussed, make timely a word of caution in view of the growing necessity for spraying as a procedure in the conservation of many edible products.

1. O'Kane, W. C.; Hadley, C. H., Jr., and Osgood, W. A.: Arsenical Residues after Spraying. New Hampshire Agr. Exper. Station, Bull. 183, June, 1917.

LARREY, THE ORIGINATOR OF RAPID EVACUATION OF THE WOUNDED

When Napoleon wrote in his will: "I leave 100,000 francs to Larrey—the most virtuous man I have known," he meant not only probity and honor, but virtue in the Roman sense. Larrey, the soldier, was the dutiful, reliable, courageous man of Roman type; Larrey, the physician, was the big human personality of large benevolent impulses, the kind of medical officer who actually carried a wounded soldier on his back in emergency. He was the generous, warm-blooded meridional, who came up to Paris from the Pyrenees, the type of Frenchman depicted in the canvasses of Ingres and David d'Angers. No French army surgeon has been so well beloved by his comrades since Ambroise Paré. He was one of the brilliant group of military surgeons whom Napoleon knew so well how to gather around him—Larrey, Percy, Desgenettes, a memorable trio. Larrey's system of movable field hospitals or flying ambulances (*ambulances volantes*) was introduced in September, 1792, when, as aide-surgeon-major of the French Army of the Rhine, he made the suggestion to General Custine, a suggestion as fraught with consequences as that of the Earl of Stair (or Pringle) at the battle of Dettingen. It created real first aid and rapid evacuation of the wounded from the battlefield, which is now the chief end of medical administration in campaign. It undoubtely served as a model for Letterman when he devised his improved system of ambulance and field hospital service for the Army of the Potomac in 1863. It was immediately followed by Baron Percy's innovation of telling off and training soldiers as field litter-bearers, to pick up the wounded in the progress of a battle and carry them on stretchers to a first aid station. To quote Larrey's[1] own words:

> My proposition was accepted, and I was authorized to organize this movable field hospital, which I named the flying ambulance (*ambulance volante*). I then conceived the idea of a system of carriages (*voitures d'ambulance*) suspended on springs, which should combine solidity with speed and lightness. This institution created a sensation among the soldiers; they now all felt confident that they would receive succor at whatever moment they might be wounded!

This, and the centric idea which went with it—that the combatant forces are to feel in action that medical men are with them, that the wounded will be removed to places of safety as rapidly as possible—is Larrey's

1. Larrey: Mémoires de chirurgie militaire, Paris, I, 64.

greatest achievement. But he did a host of other important things.

He was an opponent of meddlesome surgery, which, in his day, was as pestiferous a nuisance as meddlesome midwifery; he believed in leaving simple wounds alone to heal of themselves. He washed wounds with a simple saline solution, and employed the powerful antiseptic, Labarraque's solution, in putrid and sloughing wounds (Da Costa). In place of the fierce purging and bleeding of his time, he fed the wounded a rich diet, even using a laryngeal tube or a nasal catheter for artificial feeding in wounds about the jaws and neck. His method of dressing wounds, cleansing away of débris, trimming of dead tissue and saturation with moist loose bandages, has some present day features. He showed the imperative necessity of drainage in large wounds, head injuries and pleural injuries, and insisted that all punctured wounds should be enlarged by incision and drained. He substituted immediate amputation for the secondary operation then common, but employed conservative resection when he could avoid amputation. He was ahead of his time in his knowledge of the symptoms of brain injuries, and discovered what is now known as Battles' sign—the discoloration over the mastoid process after fracture of the base.[2] In 1802, while in Egypt, he published at Cairo, his account of Egyptian ophthalmia or granular conjunctivitis, a disease which is mentioned and prescribed for in the Ebers Papyrus,[3] but which had remained unnoticed for some 3,400 years, until Larrey saw it. He was the first to point out the contagious nature of this disease, which is the outstanding feature of his historic monograph, and now a point of greatest importance to our immigration inspectors, who pass on the conjunctivae of Levantines and Orientals coming into the port of New York.

Such was the remarkable man who died seventy-five years ago and whose life is recorded elsewhere in our columns[4]—one of the greatest names in the history of military medicine and one of the most honored names in France.

2. For these details of Larrey's achievement, we are indebted to the admirable summary by Dr. J. C. Da Costa in Johns Hopkins Hospital Bull., Baltimore, 1906, **17**, 213-215.
3. See H. Joachim's translation of the Papyrus Ebers, Berlin, 1890, **81**, 83.
4. See page 1106.

Alarming Mortality Among Negroes.—An alarming mortality among the negroes of Baltimore is shown by the statistics in the health department. Since 1912 there have been 10,813 negro births in the city, while 12,982 have been claimed by death. Among the white race the figures show that during the same period 54,483 births were reported, while 38,889 died. Dr. Blake has made an investigation and found that more than 99 per cent. of all births were reported. Since 1912 there has been a gradual increase in the birth rate in Baltimore. In 1912, 9,387 babies were born; in 1913, 10,309; in 1914, 10,662; in 1915, 11,460, and in 1916, 12,662. The annual number of negro births during the same period has ranged from 2,011 in 1912 to 2,423 in 1916. The greatest number of deaths in any one year since 1912 among the whites occurred in 1916, when 7,983 persons died; the smallest number was 7,525. The average annual death rate among the negroes for the same period was approximately 2,500.

Current Comment

THE OPERATION ON PRESIDENT CLEVELAND

Last week's issue of the *Saturday Evening Post* has a most readable account by Dr. W. W. Keen of Philadelphia of the operation that was performed on President Cleveland twenty-four years ago—in 1893—soon after the president entered on his second administration. The operation, which was performed on a private yacht, was for sarcoma of the jaw. It was quite extensive; a rather large part of the bone was removed; and yet there was rapid recovery and few knew that an operation had been performed. The late Dr. Joseph D. Bryant, who was President Cleveland's physician, performed the operation, Drs. Keen, E. G. Janeway and John F. Erdmann assisting. While the article is not of particular scientific or surgical importance historically, it is of decided interest. Dr. Keen emphasizes the critical financial and political conditions that prevailed at the time and shows how it was absolutely necessary that the dangerous condition of the president should not be made known. It is remarkable that a quarter of a century elapsed before this historically important occurrence was made public.

THE TREATMENT OF ANTHRAX WITH NORMAL SERUM

Human anthrax is increasing steadily and of late rather sharply in this country. It is coming to be recognized by students of industrial conditions as an important occupational disease. As such it must be guarded against with especial care in these days when it is so essential to maintain satisfactory conditions throughout the whole industrial organization. The resistance of anthrax spores to drying and other influences renders the disease difficult to eradicate when once it gets a foothold. Until more stringent measures for the disinfection of hides, wool and similar animal products imported from anthrax infected regions are put in force, a further increase in cases may be anticipated. The case mortality from anthrax, while high, is not as great as is sometimes stated. In the most carefully reported series it seems to range from 13 to 24 per cent., the difference being probably due in part to variations in the extent of diagnosis and in part to inclusion of mild cases. The specific anti-anthrax serum produced by Sclavo is said to have lowered the mortality rate considerably, its use in 164 cases being accompanied by a death rate of 6 per cent., as contrasted with a rate of 24 per cent. in Italy generally. Sclavo's serum has not come into common use in spite of the considerable degree of success that has attended its introduction. One reason may be that the preparation and marketing of the serum seem to entail a high expense, the cost of the initial dose running as high as thirty dollars or more. The country of Argentine with its great cattle-raising industries has suffered more severely from anthrax in recent years than any other part of the world, and it is appropriate that a new and interesting method of treatment should be proposed by R. Kraus, head of the bacteriologic institute of the national department of health of

that country.[1] The method, although its theoretical interpretation presents some difficulties, is simplicity itself in practice. It consists in the inoculation, usually intravenously, of normal bovine serum in quantities of 20 to 30 cubic centimeters or more. Intramuscular and subcutaneous injections are said to have given results substantially as satisfactory as the intravenous injections. The serum is heated twice for half an hour at 56 degrees C. before injection. In the report cited it is stated that fifty cases of bacteriologically verified anthrax were treated by this method without a single death. We understand that since this report was published the number of cases treated by Kraus with normal serum has risen to over ninety with but one death. These results are more favorable than those reported from the use of the specific antiserum.

RABBIT-FOOT THERAPY

Few but ignorant darkies have any great faith in the therapeutic efficacy of the left hind foot of a rabbit caught in the churchyard in the dark of the moon. In the light of modern therapeutics one is tempted to believe, however, that had some one person or firm an exclusive proprietary right to this particular brand of rabbits' feet, there would be many intelligent people—and not all of them laymen—ready to swear by rabbit's foot therapy. In medical journals (whose advertising pages set forth the virtues of the pedal extremities of *Lepus sylvaticus*) many solemnly scientific articles would probably appear relating the success that the writers had had with this form of therapy in the treatment of some distressingly stubborn conditions that had failed to respond to all previous efforts. Is it ubiquity that has saved the homely cotton-tail from being a therapeutic hero?

UNIVERSITY OF TEXAS FREED FROM POLITICS

Three months ago reference was made[1] to the attempt by the governor of Texas to secure political control of the University of Texas and its medical department. That attempt aroused a vigorous protest throughout the state. At a special session of the legislature, articles of impeachment were filed and Governor Ferguson was suspended; an appropriation of $1,629,407.17 for the university, including $197,500 for the medical department, which Governor Ferguson had vetoed, was again passed, and three regents of the university named by Governor Ferguson were replaced by those who have the best interests of the university at heart. Ten of the twenty-one charges in the bill for impeachment are now reported to have been returned against Governor Ferguson. Among these charges were his efforts "to coerce and influence the Board of Regents of the University of Texas" and "that he sought to violate the law by removing regents without adequate cause." This vigorous action by the Texas legislature, following the attempt of its state executive to convert the state university into a part of his political machine, will have a deterring effect on further attempts in a similar direction.

1. La Prensa Médica Argentina, Dec. 30, 1916, and Feb. 10, 1917.
1. "Politics Endangers a Great University, Current Comment, THE JOURNAL A. M. A., June 23, 1917, p. 1916.

Medical Mobilization and the War

NEWS OF THE BASE HOSPITALS

Base Hospital No. 3, Mount Sinai Hospital, New York, has been mobilized, and is expecting orders for duty abroad. The medical personnel includes Major M. A. Dailey, M. C., U. S. Army, commanding officer; Capt. William A. Schwab, quartermaster, and the following officers of the Medical Reserve Corps: director (chief of medical service), Major Nathan E. Brill; assistant director (medicine), Capt. Louis Hauswirth; physicians, Capts. Herbert L. Celler, Edwin Sternberger; Lieuts. Daniel Poll, Herbert Emsheimer, Joseph Rosenfeld, Nathan Rosenthal, and A. S. Kversky, neurologist; assistant director (laboratory), Major George Baehr and Lieut. Bernard S. Denzer; assistant director (Roentgen ray), Capt. Leopold Jachss; assistant director (chief of surgical service), Major Howard Lilienthal; surgeons, Capts. Edwin Beer, Walter M. Brickner, Robert T. Frank, Leo B. Mayer, Sidney Cohen, Ira Cohen, S. H. Geist; Lieuts. Alfred Braun, E. Bleier, registrar, and dentists, Lieuts. Jacob Asch and Louis Stern.

Base Hospital No. 23, Buffalo, is now mobilized at Fort Porter, N. Y., under the command of Major G. V. Rukke, M. C., U. S. Army, and is awaiting orders to embark for overseas service. The following is a list of the medical personnel: director, Major Marshall Clinton; registrar, Mr. E. J. Fairbairn, civilian employee; adjutant, Lieut. Timothy F. Donovan; quartermaster, Capt. J. H. Hickey; mess officer, Lieut. H. C. McDowell; commanding officer detach. medical department, Major N. G. Russell; chief surgical service, Major Marshall Clinton; chief medical service, Major N. G. Russell; pathologist, Capt. J. B. Betts; assistant pathologist, Lieut. R. N. De Niord; dental surgeons, Lieuts. C. L. Storms and E. J. Knoche. Ward officers: surgical—Capts. H. A. Smith, F. W. McGuire, J. P. Brennan, D. C. McKenney, L. Burrows; Major J. F. Fairbairn and Lieuts. W. L. Machemer and H. C. Fairbanks. Medical—Capts. F. P. Goodwin, R. F. DeCeu, Baldwin Mann, and Lieuts. H. C. McDowell, J. A. P. Millet, H. F. May and H. K. Hardy.

Base Hospital No. 27, University of Pittsburgh Medical School, has been mobilized at Allentown, Pa.

Base Hospital No. 31, of the Youngstown (Ohio) Hospital has been mobilized at Allentown, Pa., under command of Major Adam E. Schlanser, M. C., U. S. Army, and is awaiting orders for service abroad. The personnel includes: Drs. C. R. Clark, director and chief of medical service; James A. Sherbondy, assistant director and chief of surgical service; B. W. Wilson, first assistant, medical service; C. C. Wolferth, chief of laboratory; S. M. McCurdy, registrar; M. P. Jones, first assistant, surgical service; A. E. Brant, staff surgeon and urologist; J. U. Buchanan, D. A. Nesbitt, E. R. Thomas, C. H. Moses, W. K. Allsop, staff surgeons; J .L. Washburn, ophthalmologist; F. J. Bierkamp, rhinologist and laryngologist; R. R. Morrall, orthopedic surgeon; P. G. Bordon, neurologist; D. B. Phillips, C. D. Barrett, R. W. Fenton, W. H. Bunn, staff physicians; O. D. Hudnut, roentgenologist; C. M. Reed, pathologist; F. W. Ward, W. H. McCreary, dentists.

Base Hospital No. 32, Indianapolis, was mobilized, September 1, at Fort Benjamin Harrison, Ind., under command of Major Harry R. Beery, M. C., U. S. Army. Following is a list of the medical personnel: director, Major Edmund Dugan Clark; Majors Orange Garrett Pfaff and Bernays Kennedy; Capts. Carleton Buel McCulloch, Alois Bachman Graham, Charles Dolph Humes, Eugene Bishop Mumford, Lafayette Page, Harry F. Byrnes and Joseph Kent Worthington; Lieuts. Scott Robert Edwards, Ralph Landis Lochary, Raymond Cole Beeler, Robert Martin Moore, Leslie H. Maxwell, Paul Thomas Hurt, Smith Quimby, Ralph Lincoln Sweet, John Thomas Day, Joseph Warren Ricketts, Frank Columbia Walker, Jack Walter Scherer and James Vincent Sparks. The last two officers are dentists.

Base Hospital No. 34, attached to the Episcopal Hospital, Philadelphia, was called into active service, September 14, at Allentown, Pa. Following is a list of the medical personnel: Majors Ralph G. Devoe, Astley P. C. Ashhurst, Emory G. Alexander, John B. Carson; Capts. Ralph S. Bromer, R. I. Levin, John W. Moore, Henry G. Welker; Lieuts. Benjamin F. Buzby, Irvine M. Boykin, Royeal E. Durham, John S. Eynon, Lewis W. Frank, Rutherford L. John, John Paul Jone, John D. Paul, Raymond J. Sprowl, George Wilson, Karl D. Winter and John B. Wolfe; also Lieuts. George A. Cole-

man and Faver W. Croll of the dental section of the M. O. R. C.

Base Hospital No. 36, Detroit, has been mobilized at the State Fair Grounds.

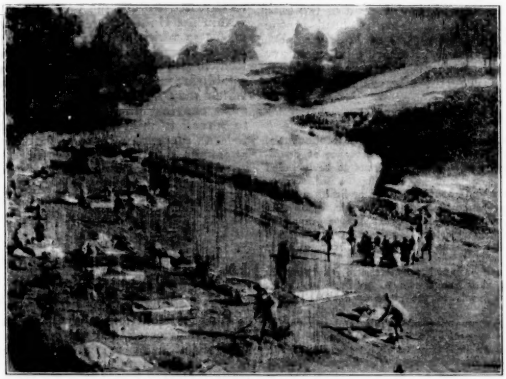
Members of **Naval Base Hospital No. 5,** recruited at the Methodist Hospital, Philadelphia, were ordered to report, September 12, to the Navy Yard in that city, for duty, and sailed, September 17, for France. This unit is under the directorship of Dr. Robert G. LeConte, Philadelphia. The members of Lieut.-Col. LeConte's staff are: Lieuts. William Hewson, J. Leon Herman, J. H. A. Cleaver and George E. Darby, Bella Bella, B. C. The officers of the unit are: assistant director, Lieut.-Com. James E. Talley, Lieuts. George G. Ross, B. B. Vincent Lyon, Grayson P. McCooch, Percival M. Kerr, Elwyn, and John A. Hugo.

NEWS OF THE TRAINING CAMPS

At Fort Benjamin Harrison

TRENCH WARFARE

The past week has been comparatively uneventful. There has, however, been one outstanding novelty in the week's program, in the assignment of details from each company for duty in the trenches. These have been dug by members of the Officers' Training Camp under the supervision of Lieutenant Haye of the French Army, and are most elaborate and realistic in construction. The trench details repair to their posts in the afternoon and prepare themselves for the night attack. When darkness comes on an opposing force attempts to take the trenches, to the accompaniment of sentry's challenges, illuminating rockets, and the other excitements of a night attack. After the attack the medical detail is supposed to go "over the top" with litters and collect the wounded, who are men previously detailed for the duty. They load them on the litters and carry them back to the regimental aid station in the trenches. The first night or two there was rain and mud in plenty, so that the elements did their best to help reproduce the conditions familiar in Flanders. The men came back to camp ready for a twenty-four hour sleep, some of them sheepishly confessing that they had been picked off by their own outposts, but all agreed that the experience was well worth the wounds and disability resulting from it.



The Bivouac at Fort Benjamin Harrison

REGULAR ARMY CANDIDATES

Candidates for the Regular Army Medical Corps who have taken their preliminary examinations have been grouped together in Companies 3 and 4, for the purpose of more intensive training and closer observation by the regular officers in charge. Some of them have already been detailed temporarily to ambulance companies and field hospitals, so as to give them the chance of studying the routine of these units at first hand. Major Darby, M. C., is conducting a most strenuous class in setting up exercises for their exclusive benefit, comprising body-rolls, somersaults, and other acrobatic feats.

LECTURES

There have been no lectures of importance during the week except for one by Major Bell of the Canadian Army on his experiences during nine months of trench warfare on the western front. Much of this time was devoted to answering questions, though his audience would have been delighted to hear him talk for an extra hour or more.

MEETING OF MILITARY SURGEONS

Colonel Ashburn announced to the assembled student officers that there is to be a meeting of the Association of Military Surgeons in Indianapolis on October 8 and the two following days. Some of the program was outlined, and the cooperation of every one was asked in making the meeting a roaring success. The country-wide fame of some of the expected visitors is of itself sufficient to make it a memorable occasion, and it is sincerely hoped that there will be a good turn-out of the profession to hear the speakers.

THE CAMP VIEW OF DRAFTING THE MEDICAL PROFESSION

Some animated discussion has been provoked in this camp by the appearance in the last issue of THE JOURNAL of a letter written by Major Richard Derby, M. R. C. He states that "a fair proportion of the physicians who have volunteered are men who have been attracted to a new life through a failure to succeed in their old," and again that "we have not obtained through the volunteer system the men best qualified for the important duty of caring for our sick and wounded." As applied to the personnel of this training camp, at least—and there is no evident reason why this camp should differ in this respect from the other Medical Officers' Training Camps in the country—such statements would seem, to say the least of it, distinctly unjustifiable. While it is true unfortunately that the average age is high, and that therefore there is evidently a lack of younger volunteers, the vast majority of the older men in training are men highly respected in their communities, who have made considerable sacrifices to follow what they considered to be the path of duty. Furthermore, if a comparison were drawn between the sum of those men who now hold commissions in the Medical Reserve Corps, or are continuing in civil life only because their services are more valuable to the country in their present capacity, and the sum of those who are taking no active part in the country's program of medical preparedness, who could then say that the pick of the country's physicians is not already in the country's service?

COMPANY NEWS AND PERSONAL

Major F. W. Loughran, M. R. C., assistant sanitary inspector, has left for New York on leave of absence.

Capt. R. M. Wilder has returned from his leave of absence, and is again at his desk in the Adjutant's Office.

Capt. Richard Weil ordered to the Rockefeller Institute.

The total strength of the training camp in medical officers alone is now 1,275.

Company 1 gave a banquet on Wednesday, September 19, at the University Club, Indianapolis, in honor of their chief instructor, Captain Celler. Eighty of the old members were present. The old company has been broken up and distributed among the other old companies. Many of the men are candidates for the regular corps. A new company has been formed this week, with Captain Celler still in command. He is to be assisted by Capt. S. J. Young and Lieuts. H. S. Osborne, V. C. von Unruh and Roy T. Morris. Lieutenant von Unruh has also been appointed assistant to Major Snyder in the teaching of equitation. The company is now under the direct supervision of Colonel Shockley, M. C.

Company 2 has lost Lieutenant Bayless from its corps of instructors. His place has been taken by Captain Stanton.

Company 7 has added Lientenant Hoyt to its instructing staff, by transfer from Company 1.

Company 8 has lost Major Caccini, its chief instructor. His place has been taken by Major Phillips.

Company 10 now has Major McCormack, M. C., in immediate command.

THE BIVOUAC

Several of the companies, through the kidness of Capt. F. Hutchins, Company 4, have had the privilege of enjoying a night's bivouac in the prettiest section of the surrounding country. During the day's trip the men were assigned problems in sanitary tactics, including choice of locations for ambulance companies, with their respective field dressing stations, and for the establishment of a field hospital, the disposition of the defending and attacking forces having been previously announced. The work is shown in the accompanying illustration.

FOR THE CONTROL OF VENEREAL DISEASES

At Jackson, Mich., September 12, a conference of men and women, prominent in business and professional life in the state, was held for the purpose of considering the menace of venereal diseases in relation to the public health. Dr. C. G. Parnall, health officer of Jackson, in explaining the purpose of the meeting said that any movement designed to attack the problem must take cognizance of two main features: the prevention of venereal diseases in the Army and the control of these diseases in the civil population. Addresses were made among others by Dr. W. H. Martin, associated with Major Snow, in charge of venereal disease work in the United States Army; Avery G. Clinger, stationed at Battle Creek Cantonment as head of the War Department Commission on training Camp Activities; Major Neil M. Wood, head of the base hospital at Camp Custer; Dr. A. S. Warthin, head of the department of pathology of the University of Michigan; Dr. J. H. Kellogg of Batle Creek and Dr. Richard Olin, secretary of the state board of health. A tentative program was outlined for the prevention of venereal diseases involving the following propositions:

PROGRAM FOR THE PREVENTION OF VENEREAL DISEASES

1. Prostitution is to be suppressed vigorously and continuously, through the enforcement of the State laws, and the issuance of certificates of health to prostitutes for use in soliciting is not to be included in this program.

2. Prostitutes brought to the attention of the police or health authorities are to be examined; and all persons, male or female, capable of spreading venereal disease are to be isolated, under the provisions of the public health act, or local ordinance, and treated at public expense as long as there is danger in the opinion of the health officer, of their exposing others.

3. Under no circumstances are infected prostitutes to be "floated" into other communities, and if they are known to go from one community to another, the health officials of the place of destination are to be notified at once.

4. The State law requiring the reporting of syphilis and gonococcus infections by physicians, office numbers, is to be enforced to the letter, and, in addition, physicians are to be urged to obtain and furnish to the local health officers the names of the persons who are suspected of disseminating infection. The local health officers are therefore to investigate and supervise or isolate infection cases according to the circumstances.

5. To provide and encourage the instruction of young men and women in the advantages of a clean life and the dangers from venereal disease.

6. To provide adequate opportunities for expert diagnosis, treatment and advice for infected persons financially unable to secure proper attention for themselves, and to encourage the continuance of treatment until the patient is cured, or at least becomes noninfectious.

7. To provide free laboratory tests for syphilis and gonococcus infections for physicians, and to encourage greater use of the tests for these diseases available at the laboratory of the Bureau of Communicable Diseases of the State Board of Health.

A permanent committee to carry on the work was appointed as follows: Dr. W. H. Sawyer, Hillsdale; Miss Eleanor Hutzell, Detroit; Rev. Caroline Bartlett Crane, Kalamazoo; Dr. A. S. Warthin, Ann Arbor; Fred L. Woodworth, state dairy and food commissioner, Lansing; Dr. C. G. Parnall, Jackson; Dr. R. M. Olin, secretary of the state board of health, Lansing; Rev. Charles D. Williams, Detroit, and Mr. James Couzens, Detroit.

By a resolution Governor Sleeper was asked to appoint a commission to make recommendations for the control of venereal diseases within the state. On this commission the governor later appointed the following: Drs. R. M. Olin, Lansing; W. H. Sawyer, Hillsdale; A. S. Warthin, Ann Arbor; C. G. Parnall, Jackson, and Guy L. Keifer, Detroit. This commission met with Governor Sleeper at Lansing, September 18. The chief features of the immediate program outlined at that meeting include the investigation of the source of the infection, the segregation and hospital treatment of all infected prostitutes and the development of hospitals for such treatment.

PUBLIC HEALTH SERVICE RESERVE CORPS

It is quite probable that Congress will enact a law providing a reserve corps for the Public Health Service, a subject already referred to in these columns. The original measure, a Senate Joint Resolution, which had the approval of the Public Health Service and the Treasury Department, passed the Senate and was referred to the Committee on Interstate and Foreign Commerce of the House. This committee has already reported, recommending the measure in the form of a bill; and while the committee has made some modifications they are not seriously in conflict with Senate's measure. The House substitute covers most of the essential features of the original measure as passed by the Senate, so that if it passes the House, which now seems extremely probable, it will undoubtedly be approved by the Senate.

The bill provides for a reserve corps to be composed of the officers of state, county and municipal health organizations, and other persons skilled in sanitary science. Such officers must make voluntary application to the Surgeon-General for appointment, and, with the assent of the proper executive officers of the respective states, counties and municipalities, may be commissioned with the grade of assistant surgeons, past assistant surgeons, surgeons, or senior surgeons in the Reserve Corps of the Public Health Service for four years, or during the war. Sanitary engineers, assistant sanitary engineers, epidemiologists and assistant epidemiologists on the recommendation of the Surgeon-General, may also be commissioned as such. The duties of the reserve corps shall be directed toward the proper sanitation of ports and places within the United States or within its jurisidiction, especially places in which or near which industrial and military forces are to be mobilized, in which the corps shall cooperate with local health organizations and officials in charge of industrial establishments. The bill provides for an elastic organization which may be immediately expanded, whereby the government can instantly attack civilian epidemics which threaten to spread to military forces, which permits sanitation under federal direction of areas in contiguity to military camps, augments existing agencies for the collection of morbidity reports, and brings into the service of the United States as an aid to military operations a body of highly trained sanitarians, engineers and epidemiologists who would otherwise be unavailable for military duty.

SURGEON-GENERAL'S OFFICE REQUESTS INFORMATION ON REHABILITATION OF THE INJURED

The Surgeon-General's Office has addressed a letter to the secretaries of all county medical societies relative to the rehabilitation of partially handicapped persons who have been successful following injury. Arrangements are being made for special treatment for the wounded, including special efforts for functional restoration of damaged parts and vocational reeducation for those who, from the nature of their illness or injury, are unable to follow their previous occupation.

INFORMATION REGARDING SUCCESSFUL CRIPPLES

To aid in this work the Surgeon-General desires to know what those who are suffering from chronic illnesses or who are partially disabled as a result of injuries, are now doing. For example, a person who has lost the right hand may still be a successful carpenter or market gardener; one having lost both lower extremities may be successful in some line in which he is not required to move from place to place; a man with chronic heart disease may be suitably occupied in work in which there is no special stress on that organ. The collection of this experience should be of remarkable assistance as showing what the various types can do.

The Surgeon-General requests that medical societies and physicians aid in this work by securing a list of partially disabled persons in the county who are successfully following trades or occupations. The information desired in reference to each case should include: (*a*) character of disability, medical or surgical; (*b*) the work at which the patient is employed, and degree of success; (*c*) the way in which he learned or entered his occupation after his injury or illness. The names of the disabled are not necessary.

If any man who has been successful after an injury or illness desires to write a short autobiography stating his experience, this will be very useful and will be utilized in preparing a booklet to be distributed to the men at the proper time.

EXEMPTION OF MEDICAL STUDENTS AND INTERNS

Provision for Permitting Medical Students Who Have Been Accepted for the Draft to Continue Their Professional Studies

In accordance with the supplemental regulations authorized by the President, the Surgeon-General of the Army has approved the following forms which are to be filled out and returned to him. This should be done without delay. It must be understood that medical students permitted to continue their studies under these provisions are not exempted and may be called to duty at any time that the President deems their services especially needed by the Army.

AFFIDAVIT OF DEAN AND STUDENT

The dean or secretary will make his affidavit and send it to the student accepted for the draft, who will make his affidavit and forward both affidavits with a copy of the order of the local board calling him to report for physical examination (Form 103), to the Surgeon-General of the Army, Washington, D. C. Affidavits must be executed by some one legally qualified to administer an oath.

AFFIDAVIT OF THE DEAN OR SECRETARY OF THE MEDICAL SCHOOL

I, ..., Dean of ..... Medical School, do swear that the official records of this school show that ....., entered this school ....., ..., and that he has successfully done the Mo. Yr.
work of his class.

.....

Date .....

Subscribed and sworn to before me this ..... day of ....., A. D. 1917.

.....

AFFIDAVIT OF THE STUDENT ACCEPTED FOR THE DRAFT

I, ..., having been accepted for the draft by local board ..... am a student in ..... second
..... Medical School in the third year, having entered said fourth
school ....., ...
Mo. Yr.

I hereby apply to the Surgeon-General of the Army to be ordered to report at once to my local board for military duty and thus to be inducted into the military service of the United States, immediately thereupon to be discharged from the National Army for the purpose of enlisting in the Enlisted Reserve Corps of the Medical Department. I have been called by local board ....., physically examined and accepted, and there is no claim for my exemption or discharge now pending and I have not been ordered to military duty. In compliance with the supplemental regulations governing the execution of the Selective Service Law authorized by the President and issued under date of August 29, 1917, I am making this application and am enclosing herewith a copy of the order of the local board calling me to report for a physical examination (Form 103).

I do hereby pledge myself to enlist in the Medical Enlisted Reserve Corps and to promptly respond either before or after my graduation on an order from the Surgeon-General to active duty.

.....

Date .....

Subscribed and sworn to before me this ..... day of ....., A. D. 1917.

.....

AFFIDAVIT OF THE MEDICAL STUDENT WHO HAS BEEN ACCEPTED FOR THE DRAFT, AND IS NOW ON ACTIVE DUTY IN A CANTONMENT OF THE NATIONAL ARMY

I, ..., having been accepted for the draft by local board ....., am a student in second
..... Medical School in the third year, fourth
having entered said school ....., ...
Mo. Yr.

I hereby apply to the Surgeon General of the Army to be ordered to be discharged from the National Army for the purpose of enlisting in the Enlisted Medical Reserve Corps of the Medical Department. I have been called by local board ....., physically examined and accepted, and am now in active service in the National Army at Camp ....., located at ....., City
..... In compliance with compiled rulings No. 11 of State
Provost Marshal General, Part 1 (Z), I am making this application and am enclosing herewith a copy of the order of the local board calling me to report for a physical examination (Form 103).

I do hereby pledge myself to enlist immediately in the Medical Enlisted Reserve Corps and to promptly respond either before or after my graduation to an order from the Surgeon General to active duty.

.....

Date .....

Subscribed and sworn to before me this ..... day of ....., A. D. 1917.

.....

Provision for Permitting Hospital Interns Who Have Been Accepted for the Draft to Temporarily Continue Their Professional Duties

In accordance with the supplemental regulations authorized by the President, the Surgeon-General of the Army presents the following form to be filled out and returned to him. This should be done without delay. It should be understood that hospital interns permitted to continue their hospital duties under these provisions are not exempted from the draft and may be called to duty at any time that the President deems their services especially needed by the Army. The spirit of the supplemental regulations issued by the President does not permit the recognition of an internship continuing more than twelve months.

The superintendent of the hospital will execute his affidavit, ask the drafted intern to fill out his and return both affidavits with a copy of the order of the local board calling him to report for physical examination (Form 103), to the Surgeon-General of the Army, Washington, D. C. Affidavits must be executed by some one legally qualified to administer an oath.

AFFIDAVIT OF THE SUPERINTENDENT OF THE HOSPITAL

I, ..., do swear that I am Superintendent of ..... Hospital located at ....., ..., and that .....
City State
....., M.D., is a bona fide intern in this hospital, devoting his entire time to his intern work and receiving therefor no compensation; that I regard his continuance in this position as essential to the best interests of this hospital; that the daily average number of patients in this hospital is ....., and that the number of interns in this hospital is .....; that the drafted intern herein specified began his internship ....., Month
....., ..., and it naturally terminates ....., ...,
Day Year Month
....., ...
Day Year

.....

Date .....

Subscribed and sworn to before me this ..... day of ....., A. D. 1917.

.....

AFFIDAVIT OF THE DRAFTED HOSPITAL INTERN

I, ..., having been accepted for the draft by local board ..... am an intern in ..... Hospital located at ....., ... I
City State
graduated from ..... Medical School ....., ... I began my internship in this hospital
Mo. Yr.
....., ..., ..., and my term of service
Mo. Day Yr.
expires ....., ..., ...
Mo. Day Yr.

I hereby apply to the Surgeon-General of the Army to be ordered to report* at once to my local board for military duty and thus to be inducted into the military service of the United States, immediately thereupon to be discharged from the National Army for the purpose of enlisting in the Enlisted Reserve Corps of the Medical Department. I have been called by local board ....., physically examined and accepted, and there is no claim for my exemption or discharge now pending and I have not been ordered to military duty. In compliance with the supplemental regulations governing the execution of the Selective Service Law authorized by the President and issued under date of August 29, 1917, I am making this application and am enclosing herewith a copy of the order of the local board calling me to report for a physical examination (Form 103).

I do hereby pledge myself to enlist in the Medical Enlisted Reserve Corps and to promptly respond at any time to an order from the Surgeon-General to active duty.

.....

Date .....

Subscribed and sworn to before me this ..... day of ....., A. D. 1917.

.....

* This report may be made in person, by mail or by telegram.

Physicians Recommended for Commission in the Reserve Corps

During the week ending Sept. 22, 1917, 709 physicians were recommended for commission in the Medical Reserve Corps, the proportion being thirteen majors, eighty captains and 616 lieutenants.

Physicians Go to Join Staff of American Hospital in Paris

At the request of Dr. Joseph A. Blake, Dr. J. B. McCook of Hartford, Conn., and Dr. W. Irving Clark of Worcester, Mass., will be sent to the American Red Cross Hospital in Paris.

Medical History of the War

Col. C. C. McCulloch, M. C., U. S. Army, and Major Fielding H. Garrison, M. R. C., U. S. Army, have been constituted a board to collect and prepare material for a medical and surgical history of the war.

Red Cross Commission to Russia Returns

The major portion of the Red Cross Commission to Russia is now in Japan on its way back to this country and is expected home about October 20. It is announced that Mr. Raymond Robins of Chicago is to remain in Russia and, in addition to his work as director of the Red Cross, will supervise the four principal relief organizations.

Statistics of the Dental Corps

The Surgeon-General's Office has completed the enrolment of, and now has at its disposal, 178 Dental Corps officers, 221 National Guard dental officers, and 2,473 Dental Reserve Corps officers, making a total of 2,872, or enough to supply in the proportion of one dentist to 1,000 men, as authorized by law, an army of 2,872,000 men. No more dental officers will, therefore, be required in the immediate future.

Doctors and Nurses Decorated

Justine Godart, undersecretary for the Army Medical Service, on September 15, visited the Chateau in the department of Yonne where the French Hospital of New York has conducted a military hospital of 250 beds since early in 1916. Decorations were conferred on Drs. John C. Irwin and Thomas M. Savage, and on nine of the nurses on duty in the institution.

Second Infant Welfare Unit Goes to France

The American Red Cross announces that Dr. Charles Ulysses Moore of Portland, Ore., has been sent to France to reenforce the Infant Welfare Unit now at work there under the direction of Dr. William P. Lucas of the University of California. With Dr. Moore will go sixteen nurses who have had special training in children's diseases and socal welfare work. A third detachment of physicians for this service is expected to sail shortly.

Red Cross Commission to Roumania Goes to Jassy

According to cable advices, the American Red Cross Commission to Roumania left Petrograd last week for Jassy. Conference with Ambassador Billings, minister to Roumania, revealed the fact that immediate supplies, including medical equipment of every kind are badly needed. Wounds are now being dressed with sawdust. An urgent need also exists for ambulance transports with drivers and machines. A typhus epidemic threatens for the winter.

Public Health Nurses to Work in Region of Cantonments

Fifty public health nurses have been assigned for duty by the American Red Cross to the zones around the various cantonments. Nurses have already taken up their work in the civil districts around the cantonments at Hattiesburg, Miss.; Fort Riley, Kan.; Des Moines, Iowa; Louisville, Ky.; Little Rock, Ark.; Ayer, Mass.; Chillicothe, Ohio; Atlanta, Ga.; Newport News and Petersburg, Va. These nurses will act as visiting nurses in the territory surrounding the camps and will endeavor to prevent the spread of tuberculosis, malaria and social diseases, and to strengthen the local infant welfare programs.

Appropriations for Sanitary Units

September 16, it was announced by the National Red Cross that appropriations had been made to assist local authorities in protecting health about Army camps as follows: for Newport News, Va., $21,000 was provided; $5,000 for three nurses to work with the Massachusetts Health Department at Ayer; $14,000 to Atlanta, Ga., chiefly for the destruction of malaria-bearing mosquitoes around Camp Gordon; $10,000 for Chillicothe, Ohio. In all $106,000 has been appropriated.

Germans Agree Not to Attack Hospital Ships

A dispatch to Paris from Madrid states that King Alfonso has obtained from the belligerent powers an agreement permitting the free movement of French and British hospital ships in the Mediterranean and the Atlantic as far as the English Channel. This agreement also provides for the removal from French hospital ships of German officers who have been held prisoners thereon, and the removal of French prisoners from exposed positions on the war front.

Sanitary Unit Established

P. A. Surg. Joseph R. Ridlon, U. S. P. H. S., has announced that a provisional allotment of $10,000 has been made for the sanitary unit of the American Red Cross at Anniston, Ala., and the unit has been established with Emmett W. Ledbetter as business manager and Dr. Ridlon as director. Work has already been begun at the task of making mosquito-proof the area adjoining Camp McClellan. A laboratory will be established in Anniston which may be used by any physician in the city or county for the examination of specimens.

American Public Health Association to Hold Special War Meeting

War and its relation to public health will be the chief topic at the meeting of the American Pubic Health Association, Washington, D. C., October 17 to 20. Papers are to be presented by President W. A. Evans, Chicago; Surgeons-General Gorgas and Braistead; Colonel Goodwin of the British Army, and others. Special symposiums will be devoted to the control of venereal diseases in the Army and Navy, and to laboratory service in war time.

Making of Comfort Kits

The American Red Cross has issued circulars, which can be obtained on application at any Red Cross chapter, relative to the making of comfort kits and bags for the men of our Army and Navy. The circular embodies the suggestions of the War Department, of General Pershing and of Major Grayson M. P. Murphy, as to what the men wish. Three types of kits are suggested: a simple bag with drawstrings and two bags with pockets, one for the trenches and one suitable for hospital use. These kits are to be made of plain khaki.

Conference of Presidents of the Examining Boards Called to Meet at Fort Benjamin Harrison

Capt. George W. Kreider, M. R. C., has called a meeting of the officers and members of the various examining boards for the Medical Reserve Corps to take place at Fort Benjamin Harrison, Monday, October 8, at 11 a. m. This conference has the endorsement of the Surgeon-General, and Dr. Kreider states that already nearly one half of the boards have responded favoring the conference at that time. Important subjects relative to the work will be brought before this conference.

Medical Patriots of Rochester, N. Y.

Major John M. Swan, M. R. C., writes that the item in THE JOURNAL for September 22, page 1014, relative to St. Louis' contribution to the Medical Reserve Corps, leads him to send the following facts relative to the contribution of Rochester: "Fifty-five physicians have been examined and have accepted commissions in the Medical Reserve Corps, or are on duty with the Second Ambulance Company, N. G., N. Y.; Third Regiment, N. G., N. Y., now the 112th Infantry, National Army, or the New York Naval Militia. There are about 415 physicians in Rochester, which makes the percentage of Rochester physicians in the service of the govern-

ment, at the present time, or who have accepted their commissions and stand in readiness to obey any order, 13.1 per cent."

Reconstruction Hospital Plans

It has been decided by the Army Medical Department to erect in Boston, New York, Philadelphia, Baltimore, Washington, Buffalo, Cincinnati, Chicago, St. Paul, San Francisco, Los Angeles, Denver, Kansas City, St. Louis, Memphis, Tenn.; Richmond, Va.; Atlanta and New Orleans, reconstruction hospitals wherein will begin a rehabilitation for private life, of soldiers who return wounded from the war front. Sites have already been chosen and it is probable that Boston, New York, Washington and Chicago will be the first cities to establish these hospitals. Each hospital will accommodate 500 patients with provision for doubling the capacity if necessary. In these institutions industrial training will be taken up and additional educational facilities will be furnished to those fitted for them. Workshops and employment bureaus will also be established for the benefit of these disabled soldiers.

Sanitary Supervision of Army Clothing Production

The production of army clothing on a tremendous scale has permitted abuses to creep in in the way of the production of such clothing in unsanitary surroundings and conditions, as the business has been farmed out by contractors and subcontractors in sweat shops and in homes. Objectionable conditions were found by the New York Child Labor Committee in instances in which the work had been given out to be done in homes, in which dangerous sanitary conditions existed and small children were found working in violation of the law. To meet the situation Secretary of War Baker appointed a board of control of labor standards, consisting of Louis E. Kirstein of Boston, Mrs. Florence Kelley, secretary of the National Consumers League, and Capt. Walter E. Kreusi of Quartermaster's Department, U. S. R. They are charged with taking such steps that the Quartermaster-General will be enabled to enforce the maintenance of sound industrial and sanitary conditions in the manufacture of army clothing, to inspect factories, to see that proper standards are established in government work, to pass on the industrial standards maintained by bidders on army clothing and to act so that just conditions prevail.

Physical Disqualification for Military Service in Italy

The Italian war department has recently issued a new official set of regulations as to the physical disqualifications for army service. The list as published recently in our Naples and Milan exchanges contains eighty-six clauses, besides a separate list of infirmities which exempt the recruit from active war service but permit him to serve on light duty, the sedentary service as it is called. One clause of the regulations provides that a register of these relatively disqualified men is to be kept at all the mobilization centers, and these men are to be called on for the sedentary service. No one is to be placed permanently on the sedentary force except those excluded by the specified infirmities from the active fatiguing war service. There has been considerable talk in Italy of late because hitherto hernia has exempted men from military service. One member of parliament, in discussing the matter recently, urged compulsory operations on men with hernia, saying that a simple operation of this kind would give the country 100,000 new and valid recruits. The new regulations alter this, as hernia now does not exclude absolutely from military service unless the hernia cannot be reduced and kept under control with suitable apparatus. It comes in the list of the infirmities permanently placing the man in the sendentary service, except what are called "button hernias." By these new arrangements, hernia no longer exempts from service but holds the man back in the sedentary service. It is optional for him, however, of course, . . . although, naturally, this is not mentioned in the *Elenco* . . . it is optional for him to have his hernia corrected by an operation which would advance him into the active ranks. Among the seventeen other infirmities which class the man permanently as fit only for the sedentary service, are facial paralysis, large and knobby hydrocele, varicocele or systocele, one leg from 3 to 5 cm. shorter than its mate, habitual dislocation of a joint, and permanent dislocation of one thumb or big toe or loss of one big toe. The *Elenco* specifies further in regard to hernia and some of the other infirmities that they are not to be classified until after the man has been under observation in a military hospital.

Orders to Officers of the Medical Corps

Lieut.-Col. G. F. Juenemann, M. C., to Gettysburg, Pa., American reorganization camp, for duty.

Lieut.-Col. E. H. Hartnett, M. C., will report in person to C. O., Western Dept., for duty.

Major J. S. Lambie, Jr., M. C., to Philadelphia, Pa., for duty as C. O. of Base Hospital No. 38, Jefferson Hospital, Philadelphia.

Major P. Waterman, M. C., to 26th Division as director of ambulance companies, with station in Boston.

The retirement of Col. G. E. Bushnell, M. C., from active service on Sept. 10, 1917, is announced.

Officers of M. C. to duty as follows: Lieut.-Col. J. W. Hanner to Camp Devens, Ayer, Mass., 76th Division, as chief surgeon; Lieut.-Col. S. J. Morris to Walter Reed General Hospital; Major John A. Burket to Camp Sherman, Ohio, 83d Division; Major L. P. Williamson from Ayer, Mass., to Washington in connection with the division of gas defense; Major D. W. McEnery to Camp Dix, N. J., 78th Division, as division sanitary inspector; 1st Lieut. R. B. Hill from 2d Regiment of Engineers, American University, to 20th Engineers.

Lieut.-cols. of M. C. to duty as follows: W. H. Moncrief to Washington; G. McD. Van Poole to Fort B. Harrison; M. A. W. Shockley and H. F. Pipes to Fort B. Harrison.

Majors of M. C. to the place specified for duty: T. H. Johnson, Philadelphia, Pa., No. 20, University of Pa. Hospital; A. von Schrader, Albany, N. Y., No. 33, Albany Hospital and Medical College.

Major E. G. Bingham, M. C., to duty as C. O. of base hospital and as commandant of medical officers' training camp at Fort Des Moines.

Orders to Officers of the Medical Reserve Corps

ALABAMA

To Camp Beauregard, Alexandria, La., for duty, Lieut. R. Jackson, Birmingham.

To Camp Sheridan, Montgomery, Ala., in the ophthalmic division, section surgery of the head, Capt. C. A. Tipgen, Montgomery; as chief of medical service, Lieut. J. S. McLester, Birmingham.

To Fort Oglethorpe for a course of instruction, Lieuts. Andrew L. Glaze, Jr., Athens; Lucius L. Terry, Solon W. Wright, Bessemer; Rufus Jackson, M. Rogers, Birmingham; Beaman S. Cooley, Boaz; W. Theo. Langley, Camp Hill; William S. Sewell, Center; Moses E. Sherer, Childersburg; Joseph T. Banks, Dadeville; Conrad Wall, Forest Home; Thomas Y. Greet, Gadsden; Horace Van de Voort, Gastonburg; Austin F. J. Boyd, Hamburg; Francis G. Hendrick, Huntsboro; Charles W. Brasfield, Linden; Howard P. Rankin, Midway; Frederick W. Wilkerson, Montgomery; Otis W. Little, James D. Perdue, Mt. Vernon; Edward C. Hagler, Northport; John F. Jenkins, Opeliker; James P. Vansant, Piedmont; Zadoc L. Weatherford, Red Bay; Julius F. Peavy, Jr., Robertsdale; Richard B. McCann, Seale; Edmond R. Lett, Tallassee; William C. Hatchett, Toney; James W. Beard, Lucian M. Tompkins, Troy; Maxwell Moody, James H. Somerville, Jr., Tuscaloosa; William M. Pierce, Tuscumbia; Bryant B. Edwards, Union Springs, and Walter E. Allen, Ward.

To Walter Reed Hospital, Washington, for treatment, Lieut. H. L. McWhorter, Collinsville.

ARIZONA

To Camp Logan, Texas, for duty in division of ophthalmology, section of surgery of the head, Capt. A. R. Warner, Komatke.

ARKANSAS

To Camp Pike, Ark., for duty, Lieut. F. L. Castleberry, Little Rock.

CALIFORNIA

To Camp Dodge, Iowa, for duty in the division of ophthalmology, section of surgery, Lieut. W. J. Hosford, Santa Cruz.

To Camp Doniphan, Ft. Sill, Okla., for duty, Lieut. A. E. Edgerton, Stockton.

To Camp Funston, Ft. Riley, Kan., from Gas School, Ft. Sill, Okla., and report in person to the commanding general for duty as instructor in gas defense, Capt. Rutherford B. Irones, San Diego.

To Camp Kearny, Linda Vista, Calif., for duty as chief of division of otolaryngology, section of surgery of the head, Capt. R. S. Anthony, Los Gatos; for duty with 40th Division National Guard, Lieuts. G. Hoskins, Ferndale; W. D. Rolph, Riverside; C. L. Morris, Santa Barbara; and G. H. Sciaroni, Sutter Creek.

To Camp Logan, Houston, Tex., from Gas School, Ft. Sill, Okla., and report in person to the commanding general for duty as instructor in gas defense, Capt. Fred. F. Sprague, Los Banos.

To Camp Mills, Garden City, N. Y., 42d Division, for duty, Lieut. A. H. Martin, Courtland.

To Camp Travis, Tex., for duty, Major H. C. Moffitt, San Francisco.

To Fort McDowell, Calif., for duty, Lieuts. W. J. Haber, and J. F. Chapman, San Francisco.

To Houston, Tex., Av. School, for duty, Capt. L. F. Luckie, Los Angeles.

To report in person to commanding general Western Department, for duty, Capt. E. L. Wemple, San Francisco; Lieuts. G. P. Tolman, Sacramento; and L. G. Seidenfeld, San Francisco.

COLORADO

To Camp Doniphan, Okla., for duty in division of ophthalmology, section of surgery of the head, Capt. A. C. Magruder, Colorado Springs; from Gas School, Ft. Sill, Okla., and report to commanding general for duty as instructor in gas defense, Lieut. William M. Bane, Denver.

To Fort Benjamin Harrison for a course of instruction, Lieut. Orion A. Grantham, Johnstown.

To Fort Oglethorpe, for a course of instruction, Lieut. Harry B. Sobernheimer, Meeker.

To Linda Vista, Calif., for duty in division of ophthalmology, section of surgery of the head, Lieut. F. N. Stiles, Grand Junction.

To San Francisco, Calif., for duty, Capt. W. A. Jones, Denver.

CONNECTICUT

To Camp Bartlett, Westfield, Mass., for duty, Lieut. W. F. Collins, New Haven.

To Camp Mills, Garden City, N. Y., 42d Division, for duty, Lieut. F. C. Young, Colchester.

To Fort Benjamin Harrison, for duty, Capt. L. I. Mason, Willimantic.

DISTRICT OF COLUMBIA

To Camp Lewis, American Lake, Wash., for duty as chief of the medical service, Lieut. C. S. White, Washington.

To Camp Sheridan, Montgomery, Ala., for duty, Lieut. J. L. Gariss, Washington.

To Fort Oglethorpe for a course of instruction, Lieuts. Charles Bell, and John H. Digges, Washington.

FLORIDA

To Camp McClellan, Anniston, Ala., from Gas School, Ft. Sill, Okla., and report in person to the commanding general for duty as instructor in gas defense, Lieut. George G. Tillman, Barton.

To Camp Sevier, S. C., for duty in division of ophthalmology, section of surgery of the head, Capt. J. Halton, Sarasota.

To Camp Taylor, Louisville, Ky., from Gas Schocol, Ft. Sill, Okla., and report in person to the commanding general for duty as instructor in gas defense, Lieut. Lester J. Efird, Tampa.

To Fort Oglethorpe, for a course of instruction, Capt. Joseph N. Fogarty, Key West; Lieuts. Joseph H. Chirles, Clearmont; Henry E. Parnell, Ft. Myers; William E. Whitlock, Ft. White; Charles L. Kennon, Elijah T. Sellers, Jacksonville; Hugh St. C. Geiger, Kissimmee; Dwight D. Rivers, Lake City; Archie C. Watson, Live Oak; Adam C. Walkup, McIntosh; James R. McEachern, Monticello; Harold M. Beardall, Orlando; John C. Holley, Pace; MacMiller Harrison, Palmetto; Baldwin S. Stutts, Pt. St. Joe; Daniel B. Williams, South Jacksonville; William J. Lancaster, Tampa; from Gas School, Ft. Sill, Okla., and report to the commandant, Medical Officers' Training Camp, for duty as instructor in gas defense, Richard Leffers, Lakeland.

To Syracuse, N. Y., for regimental duty, Capt. H. F. Watt, Ocala; Lieuts. W. H. Pickett, Gainesville; A. L. Izlar, Ocala; and J. W. McClane, St. Petersburg.

GEORGIA

To Camp Gordon, Ga., for duty in the division of ophthalmology, section of surgery, Capt. R. R. Daly, Atlanta.

To Fort Oglethorpe, for a course of instruction, Lieuts. Cecil Stoddard, James R. Smith, Atlanta; Henry D. Coffee, Auburn; David M. Silver, Augusta; Joseph E. Mercer, Baxley; Philip G. Fitzgerald, Blakely; A. Nathan Dykes, Columbus; Whitfield W. Crook, Cuthbert; Leslie L. Blair, Marietta; Carl H. Verner, Martin; Homer G. Lightner, Montezuma; Hugh W. Wade, Quitman; Burton P. Bradley, Joseph H. Mull, Rome; George L. Fuguary, Savannah; John C. Call, Sylvania, Robert C. Walker, Waycross; and John W. Bradley, Woodstock.

HAWAII

To Fort Kamehameha, H. T., from Ft. Ruger, H. T., for duty as post surgeon and surgeon of the Coast Defense of Oahu, Major E. W. Bayley, Ft. Ruger.

To Fort Oglethorpe, for a course of instruction, Major Harry R. McKellar, Ft. Shafter.

ILLINOIS

To Camp Custer, Mich., from Fort Benjamin Harrison, for duty as chief of medical service, Major E. E. Irons, Chicago.

To Camp Devens, Mass., for duty in the division of ophthalmology, section of surgery, Lieut. W. G. McDeed, Monticello.

To Camp Grant, Rockford, Ill., from Gas School, Fort Sill, Okla., and report to the commanding general for duty as instructor in gas defense, Capt. John S. Sweeney; for duty in the division of ophthalmology, section of surgery, Lieuts. H. S. Cradle; for duty, F. M. Phifer, Chicago.

To Camp Logan, Texas, for duty in division of ophthalmology, section of surgery of the head, Lieut. J. F. Strauss, Chicago.

To Camp Pike, Ark., as chief of medical service, Major A. A. Small, Chicago.

To Camp Shelby, Miss., for duty in division of ophthalmology, section of surgery of the head, Lieut. C. M. Wilmot, Spear.

To Camp Sherman, Chillicothe, Ohio, Base Hospital, as surgical chief, Capts. J. A. Harvey, Chicago; as C. O. of Red Cross Ambulance Co. No. 9, S. V. Balderton; with Red Cross Ambulance Co. No. 9, Lieuts H. M. Fogo, Evanston, and J. E. McNeel, Chicago.

To Camp Taylor, Ky., Eighty-Fourth Division, for duty, Capt. F. S. O'Hara, Springfield; for duty as chief of medical service, Lieut. W. W. Hamburger, Chicago.

To Fort Benjamin Harrison, for a course of instruction, Capt. Engene F. Wahl, Edwardsville; Lieuts. Ira J. Magee and Thaddeus S. Pierzynski, Chicago. For duty with Base Hospital No. 36, Lieut. F. L. Stone.

To Fort Des Moines, Iowa, for duty, Lieut. L. C. Gatewood, Chicago.

To Fort Kamehameha, H. T., from Schofield Barracks, for duty, Lieut. C. S. Brewer, Fairbury.

To Hattiesburg, Miss., from Fort Riley, and report in person to the commanding general, Camp Shelby, for duty, Lieut. Alexander W. Burke, Chicago.

To Fort Sheridan, Ill., for duty, Lieut. K. J. Henrichsen, Chicago.

To Jefferson Barracks, Mo., for duty, Lieut. S. Horwitz, Peoria.

To Neurological School, University of Pennsylvania, for a four weeks' course of intensive training in brain surgery, Lieut. George H. Schroeder, Chicago.

To report to commanding officer, Ambulance Co. No. 9, for duty, Lieut. J. P. Cleary, Chicago.

To Syracuse, N. Y., for regimental duty, Lieut. C. W. Shaffer, Chicago.

To Waco, Texas, Aviation School, for duty, Lieut. E. C. Gaffney, Lincoln.

INDIANA

To Camp Custer, Battle Creek, Mich., for duty, Lieut. T. I. Padgett, Jasonville.

To Camp Dix, N. J., for duty in the division of ophthalmology, section of surgery, Lieut. G. G. Van Mater, Peru.

To Camp Funston, Fort Riley, Kan., Lieut. R. C. Shanklin, South Bend.

To Camp Green, Charlotte, N. C., from Gas School, Fort Sill, Okla., and report in person to the commanding general for duty as instructor in gas defense, Capt. Leonard A. Ensminger, Indianapolis.

To Camp Shelby, Hattiesburg, Miss., from Gas School, Fort Sill, Okla., and report in person to the commanding general for duty as instructor in gas defense, Lieut. James A. Work, Elkhart.

To Camp Sheridan, Montgomery, Ala., from Gas School, Fort Sill, Okla., and report in person to the commanding general for duty as instructor in gas defense, Lieut. Oliver O. Alexander, Terre Haute.

To Fort Benjamin Harrison, for a course of instruction, Lieut. Joseph A. Graham, Hammond.

To Fort Oglethorpe, for a course of instruction, Lieut. Edwin W. Rodengeiser, Indianapolis.

IOWA

To Camp Dodge, Iowa, for duty in the division of ophthalmology, section of surgery, Capt. L. L. Henninger, Council Bluffs.

To Camp Grant, Ill., for duty in the division of ophthalmology, section of surgery, Lieut. E. J. Lambert, Ottumwa.

To Fort Oglethorpe, Ga., Lieut. J. A. White, Olin.

To Fort Riley, for duty, Capts. A. Negus, Keswick, and W. S. Norton, Muscatine.

To Washington, for duty, Capt. G. McConnell, Waterloo.

KANSAS

To Ambulance Co. No. 9, from post hospital, Schofield Barracks, Lieut. L. A. Clary, Hutchinson.

To Camp Cody, Deming, N. M., for duty and report in person to commanding general for purpose of making examinations in his specialty of recruits for the National Army, Major John E. Hewitt, Wakefield.

To Fort Houston, Texas, for duty, Lieut. P. B. Matz, Leavenworth.

To Fort Leavenworth, for duty, Capt. J. F. McGill, Fort Scott.

To Fort Oglethorpe, for a course of instruction, Lieuts. Richard C. Henderson, Pittsburg, and William J. Stewart, Summerfield.

KENTUCKY

To American University, Wash., for duty, Lieut. F. K. Foley, Central City.

To Camp Beauregard, La., for duty in division of ophthalmology, section of surgery of the head, Capt. R. Lockhart, Owensboro.

To Camp Shelby, Miss., for duty in division of ophthalmology, section of surgery of the head, Capt. O. Le R. Smith, Lexington.

To Fort Benjamin Harrison, for a course of instruction, Lieuts. Augustus B. Riley, Hartford, and Frank B. Dewitt, Rockport.

LOUISIANA

To Camp Beauregard, Alexandria, La., from Gas School, Fort Sill, Okla., and report in person to the commanding general for duty as instructor in gas defense, Lieut. Francis S. Furman, Shreveport.

To Fort Oglethorpe, for a course of instruction, Lieuts. William T. McNeese, Angie; Spears O. Turner, De Ridder; Harper L. Crow, Elmgrove; George B. LeSuer, Gonzales; Edwin O. Simonton, Jonesboro; Wiley R. Buffington and Irenaeus N. Tucker, New Orleans; Christopher L. Mengis, Norwood, and Clifford P. Rutledge, Shreveport.

To Syracuse, N. Y., for regimental duty, Lieut. H. N. Stilphen, New Orleans.

MAINE

To Camp Mills, Garden City, N. Y., for duty in division of ophthalmology, section of surgery of the head, Capt. W. E. Kershner, Bath; Forty-Second Division for duty, Lieut. H. S. Babcock, Castine.

MARYLAND

To American University, Washington, Second Regiment of Engineers, Lieut. F. H. Herman, Baltimore.

To Camp Devens, Ayer, Mass., Lieut. G. B. Wislocki, Baltimore.

To Camp Meade, Annapolis Junction, Md., for duty, Lieuts. J. H. Truitt, Bowie; F. O. Miller, Elliott City, and W. H. Kable, Woodsboro.

To Camp MacArthur, Waco, Texas, from New York Neurological Institute, New York, and report in person to commanding general and to commanding officer base hospital, for the purpose of making examination in his specialty, Lieut. George H. Preston, Baltimore.

To Camp Sheridan, Montgomery, Ala., from Boston Psychopathic Hospital, Boston, and report in person to the commanding general, and to the commanding officer base hospital, for the purpose of making examination in his specialty, Lieut. Milford Levy, Baltimore.

To Fort Benjamin Harrison, for a course of instruction, Capt. Compton Wilson, Friendship.

To Fort Oglethorpe, for a course of instruction, Capt. Henry R. Carter, Jr., Lieuts. James S. Akehurst, Robert G. Fuller, William R.

Geraghty, George H. Reinhardt, Harry C. Schmeisser, David Silberman, Daniel C. W. Smith, Horace B. Titlow, Baltimore; Alexander McC. Stevens, Easton; Oscar H. McNemar, Edenton; Richard E. Yellott, Fallston; Charles L. Magruder, New Market; Samuel J. Price, Queenstown, and Joseph W. Long, Walkersville.

MASSACHUSETTS

To Atlantic City, N. J., from Washington, D. C., for the purpose of attending a conference on the question of reconstruction hospitals, and on completion of this duty to return to his proper station, Major Elliott G. Brackett, Boston.

To Ayer, Mass., for duty as chief of division of otolaryngology, section of surgery of the head, Capt. W. F. Knowles, Boston.

To Camp Devens, Ayer, Mass., for duty, Major W. B. Lancaster, Brookline; Lieuts. V. S. Merritt, Springfield; A. A. K. Yoosuf, Worcester; from Gas School, Fort Sill, Okla., and report in person to the commanding general for duty as instructor in gas defense, Lieut. Daniel F. Mahoney, Boston.

To Camp Dix, Wrightstown, N. J., from Gas School, Fort Sill, Okla., and report in person to the commanding general for duty as instructor in gas defense, Capt. Frederick R. Ilsley, Medford.

To Camp McClellan, Ala., for duty as chief of the medical service, Capt. W. H. Robey, Jr., Boston.

To Camp Jackson, Columbia, S. C., from Gas School, Fort Sill, Okla., and report in person to the commanding general for duty as instructor in gas defense, Lieut. John M. Birnie, Springfield.

To Camp Meade, Annapolis Junction, Md., for duty, Lieut. W. J. Lally, Pittsfield.

To Fort Banks, Mass., for duty, Lieut. E. B. Hodskins, Bernardston.

To Fort Ethan Allen, Vt., for duty, Capt. H. M. Field, Norwood.

To Fort Porter, N. Y., with Base Hospital No. 23, Lieut. J. A. P. Millet, Boston.

To Fort Sill, Okla., for duty, Lieut. J. H. Anderson, Brockton.

To Neurological School, University of Pennsylvania, for a four weeks' course of intensive training in brain surgery, Major William F. Wesselhoeft, Boston.

To Base Hospital No. 44, Massachusetts Homeopathic Hospital, Boston, as recruiting officer, Capt. R. C. Wiggin, Boston.

Par. 3352, Sept. 5, 1917, War D., relating to Lieut. Harry F. Byrenes of Springfield, is revoked.

MICHIGAN

To Camp Custer, Battle Creek, Mich., for duty, Lieuts. C. M. Freedman, Ada; R. A. Davis, Clinton; F. M. Gowdy, St. Joseph, and A. W. Scidmore, Three Rivers.

To Camp Gordon, Atlanta, Ga., for duty as chief of division of otolaryngology, section of surgery of the head, Lieut. G. A. Balson, Detroit.

To Camp Lee, Petersburg, Va., from Gas School, Fort Sill, Okla., and report to the commanding general for duty as instructor in gas defense, Capt. Hugh McD. Beebe, Ann Arbor.

To Camp Meade, Md., for duty, as chief of the medical service, Major N. B. Foster, Ann Arbor.

To Camp Mills, Garden City, Long Island, N. Y., for duty, Lieut. C. F. Kuhn.

To Camp Sherman, Ohio, Eighty-Third Division, for duty, Capt. O. H. Clark, Kalamazoo.

To Fort Benjamin Harrison, for duty with Base Hospital No. 36, Major H. G. Berry, Mount Clemens; Capt. J. Sill, Onaway; Lieuts. R. E. Scrafford, Bay City; G. P. Raynale, Birmingham; R. A. Shankwiler, Detroit; A. J. Warren, Mount Clemens, and G. P. Sackrider, Owosso.

To Fort Des Moines, Iowa, for duty, Capt. W. P. Morrill, Benton Harbor.

To Youngstown, Ohio, Base Hospital No. 31, for duty, Lieut. O. D. Hudnutt, Otsego.

Par. 2347, Aug. 17, 1917, War D., which recommends the revocation of so much of Par. 48, Special Orders, No. 165, War D., July 16, 1917, as relates to Lieut. Floyd W. Lockwood, South Lyon, is revoked.

MINNESOTA

To Camp Kearny, Linda Vista, Calif., for duty in division of ophthalmology, section of surgery of the head, Capt. E. A. Meyerding, St. Paul.

To Camp Wheeler, Macon, Ga., from Gas School, Fort Sill, Okla., and report in person to the commanding general for duty as instructor in gas defense, Capt. Chelson C. Pratt, Mankato.

To Fort Benjamin Harrison, for a course of instruction, Capt. Robert H. Managan, International Falls; Lieuts. Garnett Belote, Caledonia, and Carl N. Harris, St. Paul.

To Fort Riley, from Gas School, Fort Sill, Okla., and report in person to the commandant, Medical Officers' Training Camp, for duty as instructor in gas defense, Lieut. Bret V. Bates, Wheaton.

To Fort Worth, Texas, Aviation School, for duty, Capt. J. C. Staley, St. Paul.

To Minneapolis, Red Cross Ambulance Co. No. 37, for duty, Lieuts. R. I. Dorge, Dassel, and First Minnesota Field Artillery, J. E. Soper, Norwood.

To be detailed as a member of the board appointed by Par. 23, Special Orders No. 154, War Department, July 3, 1915, to determine the result of the preliminary examinations of applicants, and the final examinations of candidates for admission to the Medical Corps, from Army Medical School, Washington, D. C., Lieut. Raymond W. Whittier, Morton.

MISSISSIPPI

To Camp Mills, Garden City, N. Y., Forty-Second Division, for duty, Lieut. W. R. Harris, Swan Lake.

To Camp Pike, Ark., for duty in the division of ophthalmology, section of surgery, Capt. E. P. Odeneal, Biloxi.

To Columbus, N. M., Twelfth Cavalry for duty, Capt. W. E. Richards, Columbus.

To Fort Oglethorpe for a course of instruction, Capt. John A. Harris, Webb; Lieuts. Charles E. Lehmberg, Artesia; Hewitt Johnston, Biloxi; Norman A. McLeod, Brookhaven; Charles G. Bell, Canton; Bernard H. Booth, Drew; Timothy D. Welch, Ellisville; David G. Lemkowitz, Fort Adams; Arthur G. Trotter, Greenwood; George J. Mancil, Indianola; John W. Brandon, Jr., Money; Iris J. Slay, Rhodes; Archibald W. McNeal, Ruleville; Carlos R. McKee, Sanbill; John K. Kellis, Shuqualak; Reginald F. Annis, Stillmore, and John G. Backstrom, Tutwiler.

MISSISSIPPI

To Fort Ruger, H. T., from Fort Shafter, for duty as post surgeon, Capt. J. C. Ballard, Biloxi.

To Fort Sill, Okla., for duty as chief of surgical service, Major J. W. Barksdale, Winona.

MISSOURI

To Camp Doniphan, Okla., for duty in division of ophthalmology, section of surgery of the head, Lieut. W. L. Small, Kansas City.

To Camp Logan, Houston, Texas, to make examinations in his specialty of recruits for the National Army, Lieut. George A. Griot, St. Louis.

To Camp Funston, Kan., for duty in the division of ophthalmology, section of surgery, Lieut. J. C. Hynes, St. Louis.

To Camp MacArthur, Texas, for duty as chief of the medical service, Capt. C. H. Campbell, St. Louis.

To Camp Pike, Little Rock, Ark., from Gas School, Fort Sill, Okla., and report in person to the commanding general for duty as instructor in gas defense, Capt. August A. Gossow, St. Charles.

To Camp Wadsworth, S. C., as chief of medical service, Capt. L. Sale, St. Louis.

To Camp Sherman, Chillicothe, Ohio, to take charge of the division of ophthalmology, section of surgery, Major C. A. Wood, St. Louis.

To Honolulu, H. T., Department Hospital, for duty, Capts. R. K. Ogilvie, Blodgett, and R. S. Bryan, St. Louis.

To report in person to Capt. A. E. Schlanser, Base Hospital, No. 31, Youngstown, Ohio, for duty, Capt. K. P. Jones, Kansas City.

MONTANA

To Fort Benjamin Harrison, for a course of instruction, Lieut. Grover C. Sherrard, Opheim.

NEBRASKA

To Camp Travis, Texas, for duty in the division of ophthalmology, section of surgery, Lieut. C. L. Hooper, Lewellen.

To Fort Oglethorpe, for a course of instruction, Lieut. David A. Walker, Comstock.

NEW HAMPSHIRE

To Camp Mills, Garden City, N. Y., for duty, Capt. P. Bartlett, Hanover.

To Camp Taylor, Louisville, Ky., Base Hospital, as roentgenologist, Lieut. F. A. Sprague, Concord.

To Fort Benjamin Harrison, from Gas School, Fort Sill, Okla., and report in person to the commandant Medical Officers' Training Camp, for duty as instructor in gas defense, Lieut. John A. Drew, Rumney.

NEW JERSEY

To American University, Wash., for duty, Lieut. A. G. Sacco, West Hoboken.

To Camp Bowie, Fort Worth, Texas, from Gas School, Fort Sill, Okla., and report in person to the commanding general for duty as instructor in gas defense, Lieut. Friend B. Gilpin, Cranford.

To Camp Hancock, Ga., for duty in division of ophthalmology, section of surgery of the head, Lieut. J. J. L. Young, Newark.

To Camp McClellan, Ala., for duty in division of ophthalmology, section of surgery of the head, Capt. W. W. Osgood, Jordan.

To Camp Mills, Garden City, N. Y., for duty, Capt. J. S. Brown, Mont Clair; Lieuts. C. F. Becker, Camden; with Forty-Second Division, J. W. Coghlan, Newark.

To Camp Shelby, Miss., for duty as chief of medical service, Capt. G. H. Lathrope, Morristown.

To Fort Benjamin Harrison, for a course of instruction, Lieut. Runkle F. Hegeman, Somerville.

To Fort Oglethorpe, for a course of instruction, Capt. Absalom S. Wescoat, Atlantic City; Thomas S. McCabe, Newark; Lieuts. George W. Potts, Asbury Park; Irving E. Charlesworth, Bridgeton; Abram C. Reeves, East Orange; Leo E. Froomess, Julius Gerendasy, Michael Vinciguerra, Elizabeth; Edward P. Essertier, Hackensack; Jacob Blumberg, Adolph Von P. Fardelmann, Jersey City; Arthur M. Greenwood, Longport; Frank H. Pinckney, Morristown; Philip Conlon, William Satterer, Newark; Arthur G. Hilliard, New Brunswick; Samuel A. Vandewater, Oradell; Edwin N. Riggins, Orange; Arthur H. Temple, Passaic; Orville R. Hagen, Charles J. Murn, Paterson; Marshall F. Lummis, Pitman; Clarence LeF. Vreeland, Pompton Lakes; William D. Sayre, Red Bank; Henry J. Harp, Sussex; George E. Harhen, Verona; Charles M. Gray, Vineland; from Gas School, Fort Sill, Okla., and report in person to the commandant, Medical Officers' Training Camp, for duty as instructor in gas defense, Lieut. Philip Du Bois Bunting, Elizabeth.

To Hoboken, N. J., for duty, Lieut. J. Toporoffsky, Paterson.

To report in person to commanding general, Western Department, for duty, Lieut. H. D. Williams, Trenton.

To Syracuse, N. Y., for regimental duty, Lieut. W. L. Corwell, Bridgeton.

NEW MEXICO

To Camp Cody, N. M., for duty in division of ophthalmology, section of surgery of the head, Lieut. J. W. Tinder, Roswell.

NEW YORK

To Camp Bartlett, Westfield, Mass., for duty, Capt. J. W. Colbert, New York City; Lieuts. F. J. A. Bennett, Auburn; L. W. Livermore, Gowanda; H. E. McGarvey, New York, and W. H. McShane, Troy.

To Camp Devens, Ayer, Mass., for duty in the division of ophthalmology, section of surgery, Capt. O. H. Johnson, New York.

To Camp Devens, Ayer, Mass., for duty in the division of ophthalmology, section of surgery, Capt. O. H. Johnson, New York.

To Camp Dix, N. J., for duty as chief of medical service, Capt. D. Bovaird, New York.

To Camp Doniphan, Okla., for duty as chief of the medical service, Major S. Strauss, New York.

To Camp Funston, Kan., for duty as chief of medical service, Capt. A. MacFarlane, Albany.

To Camp Gordon, Atlanta, Ga., for duty, Lieuts. W. E. Barron, Addison; W. N. Barnhardt, Central Islip, and A. F. A. Barry, Stony Point.

To Camp Jackson, Columbia, S. C., for duty, as chief of the medical service, Major W. W. Herrick, New York.

To Camp Lee, Va., for duty in the division of ophthalmology, section of surgery, Capt. L. E. Hetrick, New York.

To Camp Meade, Md., for duty in the division of ophthalmology, section of surgery, Capt. R. L. Crockett, Oneida.

To Camp Mills, Garden City, Long Island, N. Y., for duty, Capt. G. P. Coopernail, Redford; Lieuts. W. H. Ordway, A. A. Levine, New York; G. K. Smith, Syracuse; for duty with Forty-Second Division, M. R. Bradner, Warwick; from Gas School, Fort Sill, Okla., and report in person to the commanding general for duty as instructor in gas defense, Charles N. B. Camac, New York.

To Camp Sherman, Chillicothe, Ohio, and report in person to the commanding general and to the commanding officer of the base hospital, for duty as chief of the medical service, Major Dudley DeV. Roberts, Brooklyn; to assume command of Field Hospital Detachment No. 4, H. S. Satterlee, New York.

To Camp Upton, N. Y., Seventy-Seventh Division, for duty, Major R. Derby, New York.

To Camp Wadsworth, S. C., for duty as chief of division of oto-laryngology, section of surgery of the head, Lieut. F. V. Hoehn, Waterloo.

To Fort Benjamin Harrison, for a course of instruction, Capt. Charles H. Erway, Elmira; Lieuts. Arbor D. Munger, Brooklyn; Adolph J. Newman, New York; for duty with Base Hospital No. 36, E. Smith, Jr., Port Henry.

To Fort McDowell, Calif., for duty, Capt. K. E. Williams, Rome.

To Fort Oglethorpe, for a course of instruction, Lieuts. Oliver L. Stringfield, Brooklyn; Wellington A. Lebkicher, Fordham; Frank P. Eves, Constantine P. Faller, Gilbert J. Levy, and John K. Norwood, New York.

To Fort Porter, N. Y., with Base Hospital No. 23, Lieuts. A. A. Gartner and W. L. Machemer, Buffalo.

To Fort Slocum, N. Y., for duty, Capts. J. C. E. Daunais, Cohoes, and W. Stanton, Webster.

To Fort Worth, Texas, for duty, Capt. R. B. Anderson, Brooklyn, and Lieut. A. M. Caccini, New York.

To Hoboken, N. J., for duty, Lieuts. J. Bernstein, O. H. Heffter, Brooklyn; S. Strauss, New York; C. A. Lawler, Salamanca, and J. M. Gillette, Sloatsburg.

To Takoma Park, D. C., for duty and report in person to the commanding officer, Walter Reed General Hospital, for instruction in tuberculosis examinations, Capt. Joseph Muir, New York.

To Wichita Falls, Texas, Aviation School, for duty, Lieut. C. Atkinson, Brooklyn.

To U. S. Army General Hospital No. 1, New York, for duty with Base Hospital No. 3, Capt. L. Hauswirth, New York.

Par. 4194, Sept. 17, 1917, War Department, relating to Capt. Joseph MacDonald, New York, is revoked.

Par. 3604, Sept. 10, 1917, War Department, relating to Lieut. Arthur Krida, Schenectady, is revoked.

NORTH CAROLINA

To Boston, Twenty-Sixth Division, N. G., for duty, Lieuts. T. A. Mann, Durham, and J. H. Cutchin, Whitakers.

To Camp Bowie, Texas, for duty in division of ophthalmology, section of surgery of the head, Lieut. L. N. West, Raleigh.

To Camp Gordon, Atlanta, Ga., for duty, Lieut. I. M. Taylor, Morganton.

To Camp Greene, N. C., for duty in division of ophthalmology, section of surgery of the head, Lieut. M. Saliba, Wilson.

To Camp Jackson, S. C., for duty in the division of ophthalmology, section of surgery, Capt. J. P. Matheson, Charlotte.

To Fort Oglethorpe, for a course of instruction, Lieuts. William H. Soruggs, Jr., Asheville; Hamilton W. McKay, Charlotte; Eugene R. Hardin, Clinton; Robinette B. Hayes, Fayetteville; Paul A. Petree, Germanton; Henry F. Starr, Julius G. Thomas, Greensboro; Numa H. Crews, Leland C. McIntosh, Henderson; Vance P. Peery, Kinston; Nicholas B. Cannady, Lourinburg; William N. Thomas, Oxford; Robert P. Beckwith, Rosemary; Sanford W. Thompson, Jr., Sanatorium; Thel Hooks, Smithfield; Julius A. Dosher, Southport; Richard B. Whitaker, Vineland, and Hugh T. Moore, Wilmington.

To Neurological School, University of Pennsylvania, for a four weeks' course of intensive training in brain surgery, Lieut. Charles A. Woodard, Durham.

OHIO

To American University, Wash., Second Regiment of Engineers, Capt. E. B. Jones, Columbus.

To Camp Sherman, Chillicothe, Ohio., Lieuts. W. L. Freyhof, Cincinnati; from Gas School, Fort Sill, Okla., and report in person to the commanding general for duty as instructor in gas defense, Albert J. Brainard, Cleveland.

To Camp Taylor, Ky., for duty in the division of ophthalmology, section of surgery, Lieut. M. F. McCarthy, Cincinnati.

To Columbus Barracks, for duty, Lieut. L. M. Tinker, Frankfort.

To Fort Benjamin Harrison, for a course of instruction, Lieut. Edward Kuck, Cincinnati.

To Fort Oglethorpe, for a course of instruction, Lieuts. Israel W. Mayerberg, Scottown, and Howard E. Harman, Seetonia.

To report in person to Capt. A. E. Schlanser, Base Hospital No. 31, Youngstown, Ohio, for duty, Majors J. A. Sherbony, B. W. Wilson; Capts. F. J. Bierkamp, R. R. Morrall, J. L. Washburn, C. C. Wolferth, Youngstown; Lieuts. W. K. Allsop, Steubenville; R. W. Fenton, Struthers; C. D. Barrett, J. U. Buchanan, W. H. Bunn, C. H. Moses, D. A. Nesbit, C. McF. Reed, Jr., and E. R. Thomas, Youngstown.

To Youngstown, Ohio, Base Hospital No. 31, for duty, Capts. A. E. Brant and S. M. McCurdy, Youngstown.

To Washington, for duty, Capt. E. F. McCampbell, Columbus.

Leave of absence for one month, Lieut. F. W. McRae, Jr., Cleveland.

Par. 2619, Aug. 22, 1917, War Department, it is recommended that so much thereof as relates to Lieut. Harry N. McClellan, Dayton, is revoked.

OKLAHOMA

To Fort Clark, Texas, to Field Hospital Co. No. 7, Lieut. C. R. Ozias, Linn.

To Fort Oglethorpe, for a course of instruction, Lieuts. Fred L. Patterson, Fargo, and John M. Lee, Oklahoma.

To report by telegraph to commanding general, Southern Department, for duty, Lieut. J. H. Mallory, Apache.

OREGON

To American Lake, Wash., Ninety-First Division, Camp Lewis, for duty, Lieut. I. H. Cramer, Portland.

To Camp Beauregard, La., for duty in division of ophthalmology, section of surgery of the head, Lieut. J. R. Wetherbee, Portland.

To Camp Travis, Fort Sam Houston, Texas, from Gas School, Fort Sill, Okla., and report in person to the commanding general for duty as instructor in gas defense, Lieut. Daniel Grant, Portland.

To Fort Oglethorpe, for a course of instruction, Lieut. Daniel W. Ward, Forest Grove.

To report by telegraph to commanding general, Western Department, for duty, Lieut. H. W. Steelhammer, Silberton.

PENNSYLVANIA

To American University, Wash., Second Regiment of Engineers, Lieut. V. B. Eiler, Titusville.

To Camp Bartlett, Westfield, Mass., for duty, Capts. W. T. McConville, Honesdale, and D. H. Body, Pittsburgh; Lieut. W. R. Campbell, East Smithfield.

To Camp Bowie, Texas, for duty, Lieut. J. T. Bunting, Philadelphia.

To Camp Cody, Deming, N. M., from Gas School, Fort, Sill, Okla., and report in person to the commanding general thereof for duty as instructor in gas defense, Lieut. Asa L. Hickok, Meshoppen.

To Camp Custer, Mich., for duty in the division of ophthalmology, section of surgery, Lieut. M. H. Powers, Point Marion.

To Camp Gordon, Ga., for duty as chief of medical service, Lieut. J. C. Gittings, Philadelphia; for duty in the division of ophthalmology, section of surgery, Lieut. C. L. Kaucher, Reading; from Gas School, Fort Sill, Okla., and report in person to the commanding general thereof for duty as instructor in gas defense, Capt. Ferdinand L. Benz, Philadelphia.

To Camp Greene, N. C., for duty, Lieut. J. M. Wainwright, Scranton.

To Camp Hancock, Augusta, Ga., to duty and report in person to the commanding general for purpose of making examinations in his specialty of recruits for the National Army, Capt. John F. Culp, Harrisburg; from Army Medical School, Washington, D. C., and report in person to the commanding general for duty with the First Regiment Engineers, Pa., National Guard, Lieut. Joseph T. Murphy, Pottsville.

To Camp Lee, Va., for duty, Major L. Litchfield, Pittsburgh.

To Camp McArthur, Waco, Texas, from Gas School, Fort Sill, Okla., and report in person to the commanding general thereof for duty as instructor in gas defense, Lieut. Clifford B. Farr, Philadelphia.

To Camp McClellan, Anniston, Ala., for duty in division of ophthalmology, section of surgery of the head, Lieut. C. M. Stiles, Philadelphia; to duty and report in person to commanding general for purpose of making examinations in his specialty of recruits for the National Army, Lieut. Aaron L. Bishop, Philadelphia.

To Camp Mills, Garden City, Long Island, N. Y., for duty, Capt. W. J. Monaghan, Girardville; Forty-Second Division, for duty, Lieuts. G. H. Tibbins, Beech Creek, and J. S. Sharpe, Haverford; for duty in division of ophthalmology, section of surgery of the head, Lieut. I. S. Tassman, Philadelphia.

To Camp Sevier, Greenville, S. C., for duty in division of ophthalmology, section of surgery of the head, Lieut. C. E. G. Shannon, Philadelphia; from Gas School, Fort Sill, Okla., and report in person to the commanding general thereof for duty as instructor in gas defense, Lieut. Joseph Leidy, Philadelphia.

To Camp Sheridan, Montgomery, Ala., for duty as chief of medical service, L. H. Prince, Philadelphia; in division of ophthalmology, section of surgery of the head, Lieut. N. G. Shafritz, Mont Alto.

To Camp Travis, Fort Sam Houston, Texas, for duty, Lieut. W. H. Guy, Pittsburgh.

To Fort Benjamin Harrison, for a course of instruction, Lieut. Edward E. Hamer, Pittsburgh.

To Fort Oglethorpe, for a course of instruction, Capts. David M. Bell, Canonsburg; David O. Thomas, New Kensington; John J. McKenna and Thomas W. Penrose, Philadelphia; Lieuts. Le Roy Umburn, Albion; George T. McNish, Alverton; William C. Hensyl, Berwick; Charles B. Dotterer, Boyertown; Thomas S. Hicks, Braddock; James W. Silliman, Bradenville; Herbert E. Simrell, Clark's Summit; Charles J. Shillott, Columbia; Russell G. Witman, Conshohocken; John H. Stearns, Delaware Water Gap; Audley W. Ricketts, Dempseytown; John J. Sweeney, Doylestown; Roy Truckenmiller, Drifton; Harold A. Chering, Edinboro; Ignatius A. Bednarkiewicz, John H. Lloyd, Richard O. Miller, Jesse C. Stilley and Paul T. Young, Erie; Lawrence N. Breene, Farrell; Wilder J. Walker, Greensburg; Adam M. Robinhold, Hamburg; Clyde L. Williams, Harmonsburg; John R. Dyson, Hazleton; Sem G. Beck, Hecktown; Frank B. Stevenson, Indiana; John W. Merryman, Kennett Square; William E. Hyskell, Madera; Edgar K. Wells, Masontown; Edward Y. Ord, McKeesport; Joseph C. McFate and William B. Skelton, Meadville; John J. Hislop, Miners Mills; Porter M. Wall, Monongahela; Henry A. Carskadden and William W. Woods, Mont Alto; Wilbur E. Turner, Montgomery; Stephen S. P. Wetmore, Morrisville; Frank P. Summa, Nanticoke; Samuel H. Pettler, New Brighton; Frank F. Urey, New Castle; Henry Bley, New Ringgold, Theodore Peters, Norristown; Andrew Anders, Othmar F. Barthmaier, William P. Belk, Arthur E. Bogart, Reuben A. Bogia, James N. Coombs, William F. Craig, Vincent J. Fenerty, Jacob J. Rutberg, Charles S. Shafer, Samuel Stalberg, Carl Stoepler and Arthur R. Woods, Philadelphia; Myron Rudolph and William J. Stewart, Pittsburgh; August G. Hinriche, Pittston; John G. Striegel, Pottsville; De La Ray Signor, Quarryville; Thomas M. Snyder, Reading; Connell Edward Murrin, Scranton; William A. Ostrander, Smethport; John Whann, Jr., Soldier; Harry S. Van Etten, Stroudsburg; Arthur J. Denman, Susquehanna; Abner H. Bauscher, Temple; Martin W. Freas, United; James L. Brennan, Washington; Israel P. P. Hollingsworth and George K. Strode, West Chester; Clark H. Yeager, Wilkes-Barre, and Howard A. Collins, Winburne; from Gas School, Fort Sill, Okla., and report in person to the commandant, Medical Officers' Training Camp, for duty as instructor in gas defense, Lieut. Gibson Smith, York.

To Fort Slocum, N. Y., for duty, Capt. L. A. Spaeth, Philadelphia.

To Fort Worth, Texas, for duty as chief of surgical service, Capt. J. S. Rodman, Philadelphia.

To Hawaii, for duty, Lieut. C. N. Haines, Sayre.

To Spartanburg, S. C., charge of division of otolaryngology, Lieut. W. P. Barndollar, Pittsburgh.

To Syracuse, N. Y., for regimental duty, Lieut. R. W. Cotton, McKees Rocks.

To Takoma Park, D. C., Walter Reed Hospital, for treatment, Lieut. F. D. Lohr, Derry.

To Wrightstown, N. J., Camp Dix, for duty, Lieut. I. W. Knight, Philadelphia.

To Home, from Fort Oglethorpe, on account of being physically disqualified for active service, Lieut. Thomas V. McLaughlin, Wilkes-Barre.

PHILIPPINE ISLANDS

To Fort Oglethorpe, for a course of instruction, Lieut. William J. Burke, Manila.

PORTO RICO

To Camp Hancock, Augusta, Ga., from Little Silver, N. J., and report in person to the commanding general for duty with the First Regiment Engineers, Pennsylvania National Guard, Capt. Emmett I. Vaughn, Central Aguirre.

RHODE ISLAND

To Camp Sevier, Greenville, S. C., from Fort Benjamin Harrison, and report in person to the commanding general thereof and to the commanding officer of the base hospital for duty to the chief of the surgical service, Lieut. George W. Gardner, Providence.

SOUTH CAROLINA

To Camp Wadsworth, Spartanburg, S. C., from Gas School, Fort Sill, Okla., and report in person to the commanding general thereof for duty as instructor in gas defense, Lieut. Lindsay Peters, Columbia.

To Fort Oglethorpe, from Medical Officers' Training Camp, Camp Greenleaf, Fort Oglethorpe, and report in person to the commanding officer for duty as assistant to the sanitary inspector, and by letter to the commanding general, Southwestern Department, Major Francis L. Parker, Charleston.

SOUTH DAKOTA

To Boston, from Gas School, Fort Sill, Okla., and report in person to the commanding general, Twenty-Sixth Division, for duty as instructor in gas defense, Capt. Felix E. Ashcroft, Deadwood.

TENNESSEE

To Camp Hancock, Augusta, Ga., from Gas School, Fort Sill, Okla., and report in person to the commanding general thereof for duty as instructor in gas defense, Capt. Lee A. Stone, Memphis.

To Camp Meade, Annapolis Junction, Md., for duty in charge of the division of ophthalmology, section of surgery, Major E. C. Ellett, Memphis.

To Camp Wadsworth, S. C., for duty in division of ophthalmology, section of surgery of the head, Lieut. T. W. Rhodes, Whiteville.

To Fort Benjamin Harrison, for a course of instruction, Lieuts. Roy Granbery, Bolivar, and Charles N. Griffith, Tullahoma.

To Fort Oglethorpe, for a course of instruction, Major Cary A. Snoddy, Knoxville; Capt. Edward C. Mitchell, Memphis; Lieuts. Leon D'C. Cotten, Alexandria; Harry E. Hall, Apeson; William C. Sain, Bolivar; Leopold Shumacker, Chattanooga; Guy C. Anderson, Eads; Daniel B. Cliffs, Franklin; John G. Seay, Germantown; Granville I. Walker, Gillises Mills; William D. Cagle, Labelville; William H. Ballard, Laconia; Owen S. Deathridge, Fleetwood Gruver, John H. Lassiter, Eugene M. Orr, and Charles D. Walton, Nashville; James M. Oliver, Portland; Francis M. Boyatt, Oneida; Robert B. Griffin, Ridgely; James L. Smith, Selmer; John O. Boals, Somerville, and Frederick W. Lee, Springfield.

TEXAS

To Camp Bowie, Texas, for duty as chief of division of otolaryngology, section of surgery of the head, Capt. W. J. Mathews, Abilene.

To Camp MacArthur, Waco, Texas, for duty in division of ophthalmology, section of surgery of the head, Capt. N. H. Bowman, Beeville; for duty and report in person to commanding general for purpose of making examinations in his specialty of recruits for the National Army, Lieut. James J. Johnson, Sulphur Springs.

To Camp Travis, Texas, for duty in the division of ophthalmology, section of surgery, Capt. R. K. Cole, Dallas.

To Fort Benjamin Harrison, for duty with Base Hospital No. 36, Lieut. S. S. Fay, Galveston.

To Fort Clark, Texas, to Ambulance Company No. 7, Lieut. W. A. V. Cash, Abilene.

To Fort Oglethorpe, for a course of instruction, Lieuts. Thomas A. Booth, Cleveland; Jesse C. McKean, Lometa; Richard P. Price, Swenson; Daniel H. Brook, Travis.

To Fort Sam Houston, Texas, with Red Cross Ambulance Company No. 40, Lieut. H. A. Logsdon, Fort Worth.

To Fort Shafter, H. T., from Schofield Barracks, for duty as post surgeon, Major F. Hadra, San Antonio.

To report by telegraph to commanding general, Southern Department, Lieut. F. C. Parrott, Lott.

As commanding officer of Red Cross Ambulance Company No. 40, Lieut. W. S. Horn, Fort Worth.

VIRGINIA

To Camp Gordon, Ga., Eighty-Third Division, for duty, Capt. F. E. Jenkins, National Soldiers' Home.

To Camp Green, N. C., for duty in division of ophthalmology, section of surgery of the head, Capt. G. A. Renn, Norfolk.

To Camp Hancock, Ga., for duty in division of ophthalmology, section of surgery of the head, Capt. W. J. Olds, Front Royal.

To Camp Upton, Yaphank, L. I., from Gas School, Fort Sill, Okla., and report in person to the commanding general thereof for duty as instructor in gas defense, Lieut. Herbert D. Snyder, Norfolk.

To Camp Wheeler, Ga., for duty in division of ophthalmology, section of surgery of the head, Capt. F. E. Jenkins, National Soldiers Home.

To Fort Oglethorpe, for a course of instruction, Lieuts. William F. Passer, City Point, and Chauncey E. Dovell, Clear Brook.

To Memphis, Tenn., S. C. Aviation School, Lieut. H. C. Mallory, Greenbackerville.

To Petersburg, Va., in charge of ophthalmic division, section of surgery of the head, Capt. B. R. Kennon, Norfolk.

To report in person to the President, Physical Examining Unit, Aviation Section, Signal Officers Reserve Corps, to be established in Richmond, Va., for duty, and by letter to the officer in charge, Aviation Section, Signal Corps, U. S. Army, 119 D Street N.E., Washington, D. C., and Lieut. William W. Gill, Richmond, Va.

WASHINGTON

To Camp Lee, Petersburg, Va., for duty, Lieut. S. E. Lambert, Spokane.

To Camp Lewis, American Lake, Wash., for duty, Capt. E. C. Wheeler, Tacoma; Lieuts. C. C. Harbaugh, Sedro Woolley and F. W. Wichman, Tenino; for duty in the division of ophthalmology, section of surgery, Capt. W. E. Joiner, Seattle, and Lieut. F. G. Sprowl, Spokane; from Gas School, Fort Sill, Okla., and report in person to the commanding general thereof, for duty as instructor in gas defense, Capt. Nevin D. Pontius, Seattle.

WEST VIRGINIA

To Camp Cody, Deming, N. M., to duty and report in person to commanding general for purpose of making examinations in his specialty of recruits for the National Army, Capt. Lewis C. Covington, Charleston.

To Camp Lee, Va., for duty in the division of ophthalmology, section of surgery, Lieut. N. R. Price, Marlinton.

To Camp Sherman, Ohio, for duty in the division of ophthalmology, section of surgery, Capt. R. H. Powell, Fairmont.

To Camp Wadsworth, Spartanburg, S. C., for duty in the division of ophthalmology, section of surgery of the head, Lieut. C. F. Mahood, Alderson.

Paragraph 2352, Aug. 17, 1917, War D., which recommends the revocation of so much of Par. 119, Special Orders No. 189, War D., Aug. 15, 1917, as related to Lieut. William C. Williams, Caretta, be revoked.

WISCONSIN

To Camp Kearny, Calif., as chief of surgical service, Major J. R. McDill, Milwaukee.

To Camp MacArthur, Texas, for duty in division of ophthalmology, section of surgery of the head, Lieut. L. J. Bennett, Fort Atkinson.

To Camp Pike, Ark., for duty in the division of ophthalmology, section of surgery, Lieut. W. W. Pretts, Platteville.

To Fort Benjamin Harrison, for a course of instruction, Lieut. George E. Towel, Mosinee.

To Fort Snelling, Minn., for duty, Capt. R. M. Nichols, Sheboygan Falls.

To Hoboken, N. J., for duty, Capt. F. J. Peirce, Cheyenne.

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest; such as relate to society activities, new hospitals, education, public health, etc.)

CONNECTICUT

Personal.—Dr. George Blumer, dean of the Yale Medical School, has been appointed a member of the board of education of New Haven.

ILLINOIS

Medical Schools Merged.—Word has been received that Loyola University has taken over the Chicago College of Medicine and Surgery and merged it with its own medical department.

Chicago

Billings and Post on Way Back.—As noted elsewhere in this issue, the Red Cross Commission to Russia is now on its return to this country. Drs. Frank Billings and Wilber E. Post of Chicago are members of this commission.

Women for War Service.—Nearly 100 women physicians, at a meeting held in the rooms of the State Council of Defense, September 22, volunteered to assist in the registration of Chicago women for war service. The registration week will begin November 5.

Poliomyelitis.—There have been 153 cases of infantile paralysis in the city for the first twenty-one days of September, with two deaths. All cases are hospitalized within twenty-four hours after being reported. To defray the cost of hospitalization of cases and to fight the disease generally, the health commissioner has asked an appropriation of $118,000.

Personal.—The following is the medical staff of the newly organized Eleventh Infantry: Major B. McPherson Linnell and Lieuts. Walter H. Meents, Claude H. Searle, Wilmette, and Louis B. Cardwell.——Dr. John Ridlon has been commissioned major, M. R. C., U. S. Army, and assigned to special work in orthopedic surgery.——Dr. J. Clarence Webster, who was operated on some months ago, and who has been convalescing in Canada, has returned to Chicago.

Infantile Paralysis.—The total number of cases of infantile paralysis the first eight months of 1917 was eighty-two, as compared with 155 for the same period of 1916. In 1916 the disease began to abate by the end of August. This year, however, the number of cases increased, and for the first fourteen days of September, eighty-seven new cases were reported, as compared with twenty-five for the same period in 1916. In the eighty-seven cases, twenty-three patients died, a percentage of 26.4, as compared with 16.1 for the total number of cases in 1916. A conference of physicians called by the health commissioner to discuss ways and means of preventing a spread of the epidemic reported that there is an active focus of the disease in the lower northwest side of Chicago, and that proper intensive measures should be adopted, with ample funds for stamping out the disease. It was said that no cases of infection due to contact with other cases have been observed. Two cases, however, occurred in the same family within three days. Careful investigation failed to show any relation of the disease to the milk supply. Early in 1916 the health commissioner asked the city authorities for $500,000 as a contingent fund to fight the disease. The sum was not granted on account of lack of funds. The health commissioner has now renewed his demand for sufficient funds to combat the disease.

INDIANA

Sanatorium Transformed to Hospital.—A forty-bed sanatorium, refurnished and equipped, was turned over recently to the Methodist state hospital board at Princeton. There was a clear deed and a maintenance fund of $7,000.

Hospital Opened.—The new hospital at Marion was opened for inspection, August 24. The transfer of patients began, August 27, and was completed in two days. The hospital has been built and furnished by public subscription at a cost of $70,000, and will accomodate seventy-five patients.

District Physicians Hold Meeting.—South Bend has been chosen as the place for the 1918 meeting of the Thirteenth District Medical Association. The following officers were elected at the recent meeting at Rochester: Dr. John C. Fleming, Warsaw, president; Dr. Samuel C. Loring, Plymouth, vice president; Dr. C. Norman Howard, Warsaw, secretary-treasurer, and Dr. Hugh M. Miller, South Bend, counselor.

Typhoid Fever.—September 21, ninety-eight cases of typhoid fever were reported in South Bend. Under the advice of Surg. Julius O. Cobb, U. S. P. H. S., the following measures have been recommended: chlorination of the water supply; boiling of all well water; the use of pasteurized or boiled milk, and antityphoid inoculation.

State Health Board to Exhibit.—The state board of health, in connection with the Indiana Anti-Tuberculosis Society and the Marion Society for the Prevention of Tuberculosis, is preparing a very extensive health exhibit at the state fair which is to be housed in three tents each 30 by 60 feet. Motion pictures will be shown, and the state board of health will be represented in the departments of public hygiene, pure food, weights and measures, water analysis, and laboratory.

Personal.—Dr. Augustus L. Marshall has been elected secretary of the Indianapolis Medical Society, succeeding Dr. Leslie H. Maxwell, who is on duty with Base Hospital No. 32.——Dr. Lewis P. Drayer has been appointed secretary of the health board of Fort Wayne, succeeding Dr. John H. Gilpin, who is on duty at Fort Benjamin Harrison.——Dr. Edmond D. Clark, Indianapolis, director of Base Hospital No. 32, gave a dinner to the members of the staff at the university club, August 29.——Dr. Sarah C. Jackson, Jeffersonville, one of the founders and trustees of the Odd Fellows' Home at Greenburg, has retired from practice, and has gone to the home to live. A dinner was given in her honor by the physicians and other friends at Jeffersonville.

MARYLAND

Personal.—Dr. Frank Martin and Dr. William H. Smith, who are on the staff of the University of Maryland Base Hospital Unit, have left for Philadelphia, where they expect to review the study of brain surgery, preparatory to going to France with the unit.——Dr. John S. Fulton, secretary of the Maryland State Board of Health, who is a captain in the Medical Reserve Corps, has been named on a board appointed by Major-Gen. William C. Gorgas to prepare a medical and surgical history of American participation in the European War.——Dr. Wright S. Sudler has been appointed one of the health officers of Baltimore County, vice Dr. William E. McClanahan, Highlandtown, who has received a commission as captain in the Medical Reserve Corps.

MASSACHUSETTS

Personal.—Col. Frank P. Williams, Boston, of the Massachusetts National Guard, has been assigned to the twenty-sixth division as divisional sanitary inspector.——Dr. Gualtiero De Amezaga, Roxbury, Boston, was seriously injured in an automobile accident at Winchester, August 29.

Correction of Speech Disorders.—Dr. Walter B. Swift, Boston, has been appointed medical supervisor of speech classes in the public schools of Fall River. He has instructed teachers who will install his methods and systems of treating speech disorders in the school and form classes for phonetics, stuttering and mental defects.

MICHIGAN

Hospital Under Quarantine.—The Homeopathic Hospital at Ann Arbor was placed under quarantine, September 7, on account of the occurrence of four cases of virulent diphtheria. Two diphtheria patients died.

Personal.—Dr. Clara M. Davis, Lansing, has returned after six months in the Orient.——Dr. Allison H. Edwards has taken charge of the Grand Rapids Tuberculosis Sanatorium pending the appointment of a superintendent to succeed Miss Emma Frieby, resigned.

NEW YORK

Personal.—Dr. Frank L. Christian, Elmira, has been appointed superintendent of the Elmira Reformatory and the Eastern New York Reformatory, Napanoch.

Gibson Acquitted.—Dr. William B. Gibson, health officer of Huntington and coroner of Suffolk County, was acquitted, September 7, of the charge of having performed an illegal operation on a woman of Huntington.

Appropriation for Farm Hospital Granted.—The request of Dr. Walter S. Goodale for an additional $100,000 for the

equipment of the West Farm Hospital was granted by the Buffalo City Council, September 14.

Typhoid Fever.—September 7, there were reported in the epidemic of typhoid fever at West New Brighton, Staten Island, fifty cases of typhoid fever, and 1,000 citizens had been inoculated with antityphoid serum. The inoculations will be continued.

New York City

Budget for 1918.—Health Commissioner Haven Emerson estimates the expense of his department for 1918 as $4,101,046, or $727,457 more than the appropriation for 1917. Of this increase, $368,389 is for personal service, and $314,595 for new positions.

Public Health Service Changes.—Senior Surg. George W. Stoner, U. S. P. H. S., who for the past four years has had charge of the Marine Hospital at Stapleton, L. I., has been retired from active duty, having served forty years. Dr. Claude H. Lavinder is now in charge at Stapleton.

Medical Examiners Replace Coroners.—At a meeting of the Board of Estimate and Apportionment, September 13, the four coroners in Manhattan, two in Brooklyn, two in the Bronx, two in Queens, and two in Richmond borough will retire at the end of the year, and will be replaced by a chief medical officer in each borough. This will decrease the expenses of the office at least $40,000 a year.

New Broad Street Hospital Completed.—The new Broad Street Hospital has been opened for the reception of patients without any formal ceremony, the dedication having been deferred until some time next month. A dispensary is conducted in connection with the hospital, and two motor ambulances have been placed at the disposal of the public. This hospital was erected at a cost of $270,000, and is one of the best equipped hospitals of its size in the city. This will meet the needs of that portion of the city lying below Canal Street and between the North and East rivers.

Indictments in Diploma Case.—The Grand Jury has filed additional indictments against "Dr." Nicholas Clements and his wife, Rose Clements, and Joseph Budd, all of whom were recently arraigned, and who are alleged to have conducted a diploma factory where it was possible to purchase regent's certificates, college diplomas, and even licenses to practice medicine. Further investigations have resulted in the discovery of several additional persons who are alleged to have been practicing medicine under diplomas or licenses obtained from this source. One of these diplomas purported to be from a medical institution of high standing in Vienna, Austria.

Medical Colleges Open to Women.—Announcement has been made that the College of Physicians and Surgeons of Columbia University will be open to women during the coming month. This step has been hastened by conditions arising from the war, and has been made possible by a gift of $50,000 from George W. Breckenridge, San Antonio, Texas.——Women are also for the first time to be admitted to the medical department of New York University.——Preliminary work in biology, chemistry and physics will be offered at the New York Homeopathic Medical College and Flower Hospital.

NORTH CAROLINA

Public Health Laboratory.—Wilmington and New Hanover county have a well equipped laboratory for the free diagnosis of infectious disease, with a competent bacteriologist and chemist in charge. The bulletin of the health authorities of these municipalities complains that the facilities of the laboratory are not used as freely as they should be by the physicians of the district. It is said that cases of typhoid fever are still being diagnosed by the symptoms rather than by the laboratory findings, and fever cases that subside in a few days after the administration of quinin are called malaria, while those in which the treatment fails may be found to be typhoid fever. It is said that many cases of paratyphoid fever proceed to recovery without differential diagnosis. Criticism of the board and the laboratory, which, it is claimed, is not justified, is sometimes heard. A plea is made for a better acquaintance with the laboratory and its purposes.

OHIO

Epidemic of Typhoid Fever.—September 7, it was reported from Harrod that twenty-five persons had become ill with typhoid fever, which was supposed to have been caused by ice cream cones eaten at a family reunion. Many of the cases are said to be serious.

Dentists and Anesthetics.—In a rule made by Attorney-General McGhee, September 6, dentists may legally administer anesthetics both in the practice of dentistry and in other cases. The state medical board has contended heretofore that only physicians could legally administer anesthetics.

Personal.—Dr. Allen W. Freeman, Richmond, Va., epidemiologist in the United States Public Health Service, and formerly assistant state health commissioner of Virginia, has been elected state health commissioner of Ohio, to succeed the late Dr. George H. Matson, at a salary of $6,000 a year. He will enter on his duties, October 1, with headquarters at Columbus.

Taking Care of the Poor.—At Marion, September 7, twenty-five members of the local medical society associated themselves together as a staff to take care of such indigent patients as require hospital care who may be reported to them by the Social Service League. A division of the work will be made into the various specialties. The arrangement, it is understood, is to be continued during the war.

OKLAHOMA

Personal.—Dr. Samuel M. Hunter, Oklahoma City, has succeeded his son, Dr. George Hunter, as city physician.——It is reported that the state board of medical examiners has revoked the license granted Dr. Thomas E. Shepherd, Tulsa, who is charged with having performed a criminal operation in May last which resulted in the death of the patient. The complaint to the state board was signed by Dr. S. De Zell Hawley for the county medical society.

OREGON

Personal.—Dr. Frank M. Brooks, Portland, has been appointed a member of the state board of health, to succeed Dr. Marius D. Marcellus, who was called to the colors.——In the places of Dr. Henry E. Clay, Salem, and Dr. David N. Roberg, secretary of the board, who have also joined the Army, Drs. William H. Dale, Harrisburg, and Robert E. L. Holt, La Grande, have been serving.

PENNSYLVANIA

Typhoid Fever.—Typhoid fever is reported to be epidemic at East Petersburg, where there are at present fourteen cases.

Personal.—Dr. Charles B. Dreher, Tamaqua, was given a banquet, September 14, to commemorate the completion of half a century in the practice of medicine.——Dr. W. Roland Davies, West Scranton, has been elected president of the Craftmen's Club.——Dr. Lowell M. Gates has been elected president of the American Bank of Commerce, Scranton.

Philadelphia

Addresses County Medical Society.—Dr. Alfred Gordon, Philadelphia, delivered an illustrated lecture before the York County Medical Society at its annual meeting, September 6, on the differential diagnosis and treatment of the more common neurologic conditions met with in general practice.

Personal.—Dr. Earle B. Stokes has been commissioned first lieutenant, N. G., Pa., and assigned to duty with the First Cavalry.——Lieut. Charles S. Pancoast, having been found physically disqualified for military service, has been mustered out of the service of the United States under date of August 3, and was honorably discharged from the Pennsylvania National Guard, August 4.

Medical Institutions.—Jefferson Medical College held its ninety-third annual opening exercises, September 24. The introductory address on "How to Study" was delivered by Dr. Chevalier Jackson, professor of laryngology.——The Woman's Medical College opened its school year, September 19, with an address by Dr. Martha Tracy, dean of the college. There has been an increase of 50 per cent. over last year in the entrance enrolment.

Medico-Chirurgical Notes.—The board of review appointed to assess damages for property taken by the city for the parkway has awarded $714,500 to the University of Pennsylvania for the old Medico-Chirurgical College and Hospital property taken by the university in the merger proceedings. With the exception of the hospital, which will be retained for use in case of war emergency, all the buildings of the group will be torn down.

SOUTH DAKOTA

Personal.—Dr. Oscar W. Phelps, Lemmon, has been bequeathed $50,000 by the will of a former patient in Hope, Ill.

TEXAS

New Health Board.—A new board of health has been appointed from San Antonio, consisting of Charles S. Venable, John H. Burleson, Dabney Berrey and Thomas T. Jackson. The board reappointed Dr. William A. King as city health officer.

State Quarantine Station to Be Built.—It is announced that the work on the State Quarantine Station at Sabine Pass, construction of which was authorized some time ago, will be begun in the near future. An appropriation of $85,000 was made for this purpose.

Psychiatric Appointments.—Dr. John Preston, superintendent of the State Insane Hospital, Austin, has been appointed by the Medico-Psychological Society to organize neuropsychiatric hospital units to be attached to the base hospitals and other military sanitary units. Dr. Preston has appointed the following committee to carry out these plans: Drs. Marvin L. Graves, Galveston; John S. Turner, Dallas; George F. Powell, Terrell; Thomas B. Bass, Abilene; James R. Nichols, Austin, and John W. Bradfield, Austin.

VIRGINIA

Infantile Paralysis.—August 30, the city board of health of Harrisonburg appropriated $1,000 for fighting infantile paralysis, which had occurred in epidemic form in the city. Cases had occurred at Winchester and other places in Rockingham County. About September 16, the disease had been brought under control, and quarantine was lifted throughout the county. Since the disease was first reported in April there have been sixty-two cases, twelve of which resulted fatally.

CANADA

University News.—At a recent meeting of the board of governors of Manitoba University, a resolution was proposed that no unmarried man of 20 years or over be permitted to attend lectures or take examinations unless he furnishes satisfactory reasons why he has not enlisted. A proposal for the compulsory military training of male students was approved.

Infantile Paralysis in Ontario.—Forty-three cases of infantile paralysis, three of which have proved fatal, have been reported in the past few weeks in Ontario. The following figures show the sections of the province affected: Toronto, 7; Ottawa, 8; Edwardsburg, 7; Cardinal, 6; Cornwall, 9, and Ferguson, 2. These figures show the extreme eastern part of the province mostly affected.

Venereal Disease Committee.—The committee on the prevention of venereal diseases which has been active for some time in Toronto is to be made a permanent organization, and will be known as the Advisory Committee on Venereal Disease for Military District Number 2. Major John G. Fitzgerald has been elected president; W. S. Gundy, treasurer, and Capt. W. Gordon Bates, secretary.

Personal.—Dr. Percy W. M. Curry, Montreal, has left for Valcartier, Que., to join the C. A. M. C., and expects to go overseas shortly.——Dr. Albert E. MacCaulay, superintendent of the General Hospital, St. John, N. B., has resigned.——Dr. Alfred B. Atherton, formerly of Fredericton, N. B., has retired from practice, and has taken up residence at San Diego, Calif.——Capt. A. H. Hall, who was wounded in France, has resumed practice in Quebec City.——Dr. Robert G. Ferguson, Winnipeg, has been appointed medical superintendent of the Qu'Appelle Sanatorium, pending the return of Dr. Fred J. Hart, who is on active service.——Among the recently wounded are: Capts. J. Harold Jones, Vancouver, B. C.; Robert Mackenzie, Vancounver, B. C.; Richard W. Kenney, Winnipeg, and James E. Bloomer, Moose Jaw, Sask., all of the C. A. M. C.——Dr. William L. Denny, Western University, London, Ont., 1917, has obtained a commission in the Royal Navy as medical officer.——Dr. Duncan A. McKillop, St. Thomas, Ont., Western University, London, has been appointed surgeon with the Royal Navy.——Lieut. Donald Neil Stuart, V. C., D. S. O., R. N. R., Prince Edward Island, has been given the Victoria Cross for services in action with enemy submarines.——Capt. Alexander L. McQuarrie, medical officer of health, New Westminister, B. C., and who went overseas with the 121st Battalion as regimental medical officer, has been appointed officer commanding Canadian Sanitary Section No. 7 in England.——Major Angus W. McPherson, C. A. M. C., medical officer of health, Peterboro, Ont., has returned to Canada for two months' leave of absence.——Dr. Louis De L. Harwood, superintendent of the Notre Dame Hospital, Montreal, has left Canada to join the staff of Laval Military Hospital in France.——Capts. L. J. Siebert and Hereward D. Livingstone, Toronto, Lieut. John M. Mac Donald, Toronto, C. A. M. C., and Dr. Percival E. Faed, Grace Hospital, Toronto, have left for China.——Lieut.-Col. John R. Spier, Westmount, C. A. M. C., is in command of the Canadian Hospital, Bromley, England.——Capt. Harold A. Simpkins of the Spadina Convalescent Hospital, Toronto, has been transferred to England.——Capt. Frank S. Park, C. A. M. C., who was taken prisoner by the Germans in June, 1916, was attached to the Fourth Canadian Mounted Rifles. He asked permission to attend the allied prisoners at Minden Hospital, where there are 2,000 prisoners, and for some months has been acting as medical officer to that hospital.

GENERAL

Organization of Dental Surgeons.—The association of military Dental Surgeons of the United States has been organized, with offices in San Francisco. Dr. John D. Millikin is president of the association, which publishes a quarterly bulletin of dentomilitary news.

Correction.—Dr. F. A. Faught writes that in his discussion of Dr. Slemon's paper, THE JOURNAL, September 8, p. 780, lines 9, 10 and 11, should be corrected to read: "This corresponds with the 3:2:1 ratio; that is, the pulse presssure is ⅓ the systolic and ½ the diastolic."

Industrial Accidents Considered.—The International Association of Industrial Accident Boards and Commissions held its fourth annual meeting at the state house, Boston, August 21 to 24. Among the subjects discussed were, "Medical Competence and Hospital Efficiency," and "Compensation Insurance."

Correction.—Dr. Curtis F. Burnam writes that a typographical error appears in the report of his discussion on the papers on radium, THE JOURNAL, September 22, page 996. In the sentence: "In the cases which I am reporting I feel that the results could be duplicated by the use of 3 or 4 mg., although I have used myself as much as a gram or two with some of them," the numerals 3 or 4 should be 300 or 400.

Personal.—Rear Admiral Charles F. Stokes, U. S. Navy, retired, and until recently medical director of the board of inebriety and in charge of its country retreat at Warwick, N. Y., is reported to be seriously ill at Brian Cliff Manor, N. Y.——Dr. Ross H. Skillern, Philadelphia, has accepted a commission as major in the Medical Reserve Corps, and has been placed in charge of the nose and throat unit at Camp Sheridan, Montgomery, Ala.

Bequests and Donations.—The following bequests and donations have recently been announced:

Chicago Home for Crippled Children, $5,000, and Iroquois Memorial Hospital, $500, by the will of Mrs. Kate Adams Cooper, Chicago.

Misericordia Hospital, Philadelphia, a donation of $10,000 for the establishment of a ward to be known as the Elinor C. Donnelly room.

Lincoln Hospital and Home, New York, $81,000; New York Orthopedic Dispensary and Hospital, and New York Society for the Prevention of Cruelty to Children, each $40,615, and St. John Guild, $240,890, by the will of Mrs. Helen Juilliard, New York.

Yale Medical School, New Haven, a donation of $100,000 for the Harriman Fund for Obstetrics, by Mrs. Edward H. Harriman, and a donation of $50,000 by Charles N. Brooker, Ansonia.

Pennsylvania Hospital, the furnishings of the Tate Home; Pennsylvania Indigent Widows, and Single Women, Philadelphia, $10,000 in trust, by the will of Susan Tate.

University Museum, Philadelphia, donation of the archeological and ethnological collections of the late Dr. William White, by his widow.

Montefiore Home, New York, $1,000, and to Mount Sinai Hospital his residuary estate, by the will of Julian A. Hellman.

War Tuberculosis.—Preparations for the extensive campaign to prevent the spread of tuberculosis in the United States Army and in the conscripts rejected by the draft will be the theme for discussion at the meeting of the Southern Sectional Conference of the National Association for the Study and Prevention of Tuberculosis which is to be held in Chattanooga, Tenn., November 9 and 10. The officers of the conference are as follows: president, Dr. Lewis B. McBrayer, Sanatorium, N. C.; vice presidents, Dr. Louis A. Bize, Tampa, Fla.; Mr. W. N. Runn, Asheville, N. C.; Dr. Robert Wilson, Jr., Charleston, S. C.; Mr. C. E. J. Mooney, Memphis, Tenn.; Mr. Kendall Weisigner, Atlanta, Ga.; Dr. Gaston J. Greil, Montgomery, Ala., and Mrs. Edward McGehee, New Orleans, and secretary, James P. Kranz.

Mississippi Valley Conference on Tuberculosis.—The fifth session of the Mississippi Valley Conference on Tuberculosis will be held at Minneapolis and St. Paul, October 8-10, under the presidency of Mr. James Minnick, Chicago. The object of the conference is to bring up a closer relationship between

antituberculosis agencies in the Mississippi Valley, and provide for the interchange of ideas and experiences; to strengthen and extend the work of the National Association for the Study and Prevention of Tuberculosis; to arouse the people of this valley to the need for concerted action, both public and private, against tuberculosis, and to effect closer cooperation between antituberculosis societies and other health agencies. The headquarters will be at the Radisson Hotel, Minneapolis, for October 8 and 9, and at the St. Paul Hotel, St. Paul, October 10. The states of Ohio, Michigan, Indiana, Wisconsin, Illinois, Kentucky, Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska and Kansas are included in the conference. On the second day the first annual meeting of the Mississippi Valley Sanitarium Association will be held, at which Dr. James W. Pettit, Ottawa, Ill., will preside. On the afternoon of October 10, the tuberculosis problems of the war will be the topic for discussion.

Poliomyelitis.—Since September 10, cases of poliomyelitis have been reported in the press from the following places: Chicago, September 21, there had been 142 cases, with 2 deaths; September 11, 3 cases and 3 deaths were reported from Rock Island; the state board of health at Des Moines, September 18, had received reports of 43 cases throughout the state, 19 of which had occurred at Davenport and vicinity, where the disease was epidemic. Other towns and counties in the state reporting cases were Deep Creek, Clinton County, Lynn, Plymouth, Fayette and Monona counties; Castana reported 3 deaths, with 1 case under quarantine; Knoxville, Marion County, reported several cases in the county; Schleswig had 1 case, September 15; Waterloo had 1 death, September 16; Kansas City, Mo., September 14, had 3 cases; September 15, Montana reported no cases since August 18. In Nebraska, September 14, 5 suspected cases had been reported to the state health authorities from Hebron, 2 from Dawson, 1 from Schuyler and 1 from Johnson; at Omaha there had been but few cases, and no alarm was felt. In New York City names and address of infantile paralysis patients are published so that parents may protect their children. The plan has worked well, it is said. Pennsylvania reported 1 case from Waynesboro, September 12, and 1 from Mahanoy City, September 14. There had been 107 cases in the state during August.

FOREIGN

Deaths in the Profession Abroad.—F. Wullyamoz of Lausanne, a pioneer in roentgenoscopy and surgery under screen control before the war, aged 40.——**R. Alvarez,** chief of the psychiatric clinic at Cordoba, Argentina.——**A. Biondi,** docent of medical pathology at the University of Naples, aged 71. From recent casualty lists in France: **P. Bournet, Bornet, Tardif, Zagrewski, Dagès, M. Gohier, Chambrelent** and **P. Patriarche,** all aide-majors.

New Medical Journal in Argentina.—The bimonthly, *El Monitor,* Santa Fe, Argentina, has appeared in a journal of forty-four pages divided into two parts, one devoted to medicine, surgery, hygiene and pharmacology; the other is given up to articles on chemistry, industrial hygiene and veterinary questions. The editor in chief is Prof. E. Escobar, who is director of the service for children's diseases at the public hospital and also of the National Industrial School. The journal aims to be a bi-monthly review of science and industry. The annual subscription is about $6.

The Gasoline and Coal Question in the Netherlands.—One of the subjects mentioned in the president's address at the recent annual meeting of the Netherlands Medical Association was the scarcity of gasoline and coal. The outlook for gasoline is dark, the committee in charge of this matter reported. The state "benzine-control commission" admits that the conditions are cause for concern, but that it was hoped to be able to supply physicians with about 40 per cent. of the amount they used in normal times. The new price regulation by Germany has cooperated in the grave condition, it is said. The state petroleum commission announces that physicians can be supplied at present with 8 or 10 liters of petroleum for professional use, but stricter regulations are impending. The local (the Hague) coal-control commission is giving out small units of coal for various places, and among them are physicians' offices and waiting rooms. The quantities thus taken are to be credited to the amount set aside for physicians, to be estimated later. After October, the gas and electricity supply is to come under the control of the coal-supply commission. As to obtaining fodder for horses owned by physicians, nothing had been settled at the time of the meeting.

LONDON LETTER

LONDON, Sept. 1, 1917.

The War

DRASTIC FOOD CONTROL

The measures of food control taken have from time to time been previously reported in THE JOURNAL. Some of a most drastic character have just been taken, greatly extending the control beyond anything previously done. The object is to prevent "profiteering" (a term which has come into vogue since the war, and means making undue profits in consequence of opportunities furnished by the war). The maximum price, both wholesale and retail, at which the most important foods may be sold is now laid down by law according to schedules. Thus the maximum price at which Argentine, Canadian, American and Irish creamery butter may be sold is $41 for 112 pounds. This, of course, is the wholesale price. Any person other than the importer or maker may not sell butter at a price which exceeds by more than $2 a hundredweight the price paid by him or the first-hand price in force at the time, whichever is the lesser. With regard to retail sales, it is provided that no person shall sell butter at more than 5 cents a pound in excess of the cost to him, but an additional cent may be charged for giving credit or for delivery. From the terms of this order it may be assumed that the retail price of butter will vary from about 50 to 59 cents a pound. This is practically its present price, so that any advantage the order may have for the consumer will be in preventing a further increase in price. The cheese order applies only to wholesale prices of British-made cheeses. They must not be sold by a maker at prices exceeding $29 to $33 a hundredweight, according to the variety of cheese. No person other than the maker may sell at a price in excess of whichever is the lesser of the two following: (*a*) $1.50 above the price paid, plus the cost of transport, or (*b*) $2.50 above the first-hand price. The price of meat is similarly regulated. Beef now costs 42 cents a pound and mutton 36 cents. Bread now costs 24 cents for a 4-pound loaf, but according to a regulation about to come into force this price will be reduced to 18 cents. The price of wheat does not allow bread to be sold at this rate, and the government will bear the loss, which is estimated at about $100,000,000 per annum. This measure to keep "the staff of life" at a fixed price is designed to benefit the very poor, persons who unlike munition workers and others, are not receiving greatly increased wages in consequence of the war.

CIVILIAN PHYSICIANS IN THE ARMY

Sir Alfred Keogh, Director-General of the Army Medical Corps, proposes to establish a branch to deal with questions directly affecting territorial and temporary medical officers. It will be able to collect and collate information on the many problems raised by the incorporation of so large a number of civilian physicians in the Army Medical Service. The fact that they now constitute about eleven twelfths of the service is in itself sufficient to justify the new departure. It is understood that the intention is that the staff of the branch shall include a territorial and a temporary officer having recent experience of war conditions.

Bubonic Plague in the Port of London

The steamship *Matiana,* from Bombay, arrived at Gravesend, August 13. On the voyage, between July 14 and 28, there were nine cases of bubonic plague, with six deaths, among the crew, all natives of India. The bodies were buried at sea. Three convalescent or more chronic cases were taken off at Gravesend and removed to hospital. The crew was kept under medical observation, and another case occured which resulted in the death of the patient in hospital. The vessel called at Falmouth, August 11, but no cargo was discharged and no passengers were landed at that port. The ship remains at the official mooring station off Gravesend, and the cargo was discharged into lighters under supervision of the health officer of the Port of London sanitary authority, who is taking all necessary precautions.

The Campaign Against Venereal Disease

Considerable progress has been made with the organization of measures for the free diagnosis and treatment for persons suffering from, or suspected to be suffering from, venereal diseases. Between 140 and 150 hospitals in England and Wales have expressed their willingness to participate in the scheme of local authorities, and although in a few instances the authorities of important hospitals have been reluctant to inaugurate during the war any fresh arrange-

ments for the treatment of these diseases, this hesitatioon has already been overcome in some cases. The shortage on medical staffs and the pressure on the accommodations at most hospitals have presented obstacles in many instances. The former difficulty has been met to some extent by the army council arranging that certain officers of the Army Medical Corps specially skilled in the treatment of venereal disease should devote part of their time to the work of the clinics provided at general hospitals for the treatment of these diseases. Complete schemes for the diagnosis and treatment of these diseases have already been submitted by 115 out of the 145 councils which are charged with the execution of the regulations. The total population of the areas of these councils is about 29,000,000. Eighty-nine schemes, serving a population of about 25,000,000, have been approved, and the work has already started at sixty-two hospitals. It is estimated that the facilities provided at these hospitals will serve a population of at least 18,000,000 people.

PARIS LETTER

PARIS, Aug. 30, 1917.

The War

BOMBARDMENT OF HOSPITALS

For some time past the enemy has bombarded our hospitals incessantly. The hospital units at Dugny, Monthairons, Vadelaincourt and Belrupt, in the region of Verdun, have been subjected to several bombardments, during which forty-three nurses and soldiers have been killed, and fifty-five wounded. The bombardment of the hospital at Dugny began July 14, and was renewed July 22, and again August 3. From August 10 to 18, the bombardment took place every day, except August 15. August 18 it was particularly heavy. Trenches had been dug around the hospital, and afforded some protection against the enemy's attack. Mlle. de Baye, head nurse, was outside of the trench, caring for the safety of patients and superintending the personnel under her orders, when a shell burst, killing Mlle. Eugénie Pietrowska, Mmes. Vostey and Fischot, and seriously wounded Mlles. de Baye, Hartz, Leclerc, Leduc and Paque. August 20, an incendiary bomb was thrown from a German aeroplane, and struck the hospital of Vadelaincourt. The bomb penetrated a room for dressings, killing a nurse, Mlle. Vandamme. The barracks caught fire, and it spread to the neighboring buildings. The aviator threw a second bomb, which struck the operating pavilion in which three surgeons and their assistants were operating. The pavilion was entirely destroyed. Nurses and patients were driven from the hospital by the flames of the burning building. The aviator, flying very low, started in pursuit, firing his machine gun, and the result was sixty-eight victims, thirteen of whom have since died.

THE AMERICAN RED CROSS IN BELGIUM

Major Murphy, head of the American Red Cross Commission, has just returned from a journey in Belgium, where he has been studying the administration of relief work and questions of reconstruction. The American Red Cross plans to carry out an extensive program looking to the improvement of conditions in Belgium. It is the intention not only to develop further the work that has been already organized, but also to establish new branches. Major Murphy was accompanied by Warwick Greene, who was a member of the Rockefeller Foundation, and by Frédéric Hoppin, who is a member of his staff.

AMERICANS DECORATED WITH THE CROSS OF THE LEGION OF HONOR

M. Painlevé, minister of war, has just bestowed the cross of the Legion of Honor on Lady Michelham, Mrs. Borden Turner and Miss Ivens, at the same time thanking them for their devotion to the wounded. Lady Michelham has founded at Paris a hospital for French and British wounded; also two other hospitals, one at Dieppe and one at Cap Martin.

GIFT FROM URUGUAY FOR THE DEVASTATED PROVINCES OF FRANCE

M. Jules Mailhos, a noted citizen of Montevideo, Uruguay, died recently. He was of French extraction, and during his lifetime had become distinguished for generosity shown the people of France. Since the beginning of the war, especially, he had sent to the Franco-American Committee in France 100,000 francs ($20,000), to be divided among various forms of relief work in France. His widow and his sons have recently turned over to the same committee, for devastated provinces of France, a new gift of 30,000 francs ($6,000).

Coal Tickets

Beginning Sept. 1, 1917, coal for domestic use will be sold in Paris only on the presentation of tickets, which will be issued after the same manner as sugar tickets. Coal tickets will be furnished householders through the mayor's office, beginning with the first week of September.

Antirabic Vaccinations at the Institut Pasteur

During the year 1916, 1,391 persons have received antirabic treatment at the Institut Pasteur at Paris. Six patients, or 0.43 per cent., have died of hydrophobia. Two of these six patients were seized with the disease during the course of the antirabic treatment. One died less than two weeks after the end of the treatment. These three patients should be deducted. The corrected statistics given by the Institut Pasteur are as follows: The number of persons treated, 1,388; the number of deaths, three; mortality, 0.21 per cent.

As may be seen, the percentage of mortality from hydrophobia has slightly increased. The number of persons bitten is much larger than before the war. During the years preceding 1914, there had usually been no deaths from hydrophobia in Paris.

Professional Secrecy Imposed on Physicians

M. Mesureur, director of the Assistance Publique, having proposed to the Académie de médecine that professional secrecy as regards matters of abortion be abolished, the Syndicat des médecins of the Seine has published the following protest as drawn up at its general assembly:

"Considering the fact that professional secrecy should be inviolate, not only in the interest of the patient but of society as well; in view of the fact that the role of a physician is not to be an informer against, but rather the deliverer of, the sick who confide in him; bearing in mind, furthermore, that these patients would no longer consult him, if it were otherwise, and believing that the measure would be impracticable and harmful, we do hereby vigorously protest against any violation of professional secrecy, and more particularly against the proposal of M. Mesureur to the Académie de médecine that abortions should be made publicly known."

On the other hand, the Syndicat des médecins of Toulouse has expressed its opinion on this question in a letter addressed to the perpetual secretary of the Académie de médecine, to the effect that a measure of such grave and unusual import should not be decided on without a joint meeting of the various medical organizations being held. The medical society of Toulouse declared itself in favor of the proposal to accord to the medical societies and associations interested the right to prosecute directly persons guilty of abortion, without being required to give evidence of personal interest. Furthermore, it gave expression to the wish that this principle be extended in its application so as to include every misdemeanor and offense against public policy growing out of infanticide, attempts at abortion, and birth control propaganda.

Marriages

NAT BAILEY TWYCROSS BARKER, M.D., Woodland, Maine, to Miss Catherine Blaisdell of Winterport, Maine, August 30.

JOHN DENNIS BOWEN, M.D., Johnstown, Pa., to Miss Margaret A. Sullivan of Binghamton, N. Y., September 12.

FRANCIS XAVIER WALLS, M.D., to Mrs. Livingston T. Dickason, both of Chicago, in New York City, September 4.

CAPT. EDWIN MORTON MILLER, M. R. C., U. S. Army, to Miss Blanche Guthrie of Chicago, September 8.

GUY LESLIE KAY, M.D., Wilmington, Calif., to Miss Irma Mae Olesen of Santa Cruz, Calif., August 28.

NICHOLAS DUVALLY, M.D., Fall River, Mass., to ALICE ETTA RUTH BUTLER, M.D., of Boston, September 5.

J. H. WESTCOTT, M.D., Norwich, N. Y., to Miss Annie L. Mallard of Washington, D. C., September 8.

MARCUS H. HELDMAN, M.D., Great Falls, Mont., to Mrs. Ada Prior of Pasadena, Calif., September 6.

ARTHUR THOMAS BAILEY, M.D., to Miss Ethel Osman, both of Iowa City, Ia., September 3.

ARVID E. KOHLER, M.D., to Miss Hazel Giles, both of Moline, Ill., September 15.

RALPH KING, M.D., to Miss Nana Wharf, both of Chicago, September 4.

ASA JOHNSON, M.D., to Miss Hazel Perry, both of St. Paul, July 25.

Deaths

Capt. James Carroll Byrnes, Medical Director, U. S. Navy (retired), East Orange, N. J.; University of Georgetown, Washington, D. C., 1870; aged 66; a Fellow of the American Medical Association; who served as assistant surgeon in the Army in the Indian wars; entered the Navy in 1876; was surgeon of the *Cincinnati* during the Spanish-American War; was then transferred to the Pacific Fleet; was in command of the Naval Hospital at Newport in 1909, and of the Brooklyn Naval Hospital in 1910, and was retired, Jan. 12, 1913, on attaining the aged of 62 years, after fourteen years and nine months' sea service, and twenty years and two months' shore or other duty; died at the home of his sister in Brooklyn, September 15.

Capt. Charles Harvey Bowker, M. R. C., U. S. Army, Washington, D. C.; Hahnemann Medical College, Philadelphia, 1892; National University, Washington, D. C., 1900; aged 47; a Fellow of the American Medical Association, and a member of the Association of Military Surgeons of the United States; associate professor of bacteriology in Howard University, Washington, D. C.; formerly major in the Medical Corps of the District of Columbia, National Guard; recently stationed at Roosevelt, Ariz.; was drowned in Roosevelt Lake, September 9, while endeavoring to rescue a woman from drowning.

David St. John, M.D., Hackensack, N. J.; Bellevue Hospital Medical College, New York, 1875; aged 68; a Fellow of the American Medical Association; a member of the New Jersey State Medical Society, and the New York Academy of Medicine; surgical director and visiting surgeon of the Hackensack Hospital; a member of the State Hospital for the Insane, Mossir Plains; ex-president of the Bergen County Medical Society; died, September 14, at his country home in Berne, N. Y., after an illness of more than a year.

Alexander Bryan Johnson, M.D., New York; Columbia University College of Physicians and Surgeons, New York, 1885; aged 47; formerly a member of the Medical Society of the State of New York; member of the American Surgical Association; professor of clinical surgery at Columbia University, and consulting surgeon at the New York Hospital; died at his home, East Hampton, L. I., September 4, from heart disease.

William Redfield Butt, M.D., Canton, Ohio; University of Pennsylvania, Philadelphia, 1904; aged 37; a Fellow of the American Medical Association; a member of the Philadelphia Laryngological Society; Philadelphia Section on Otology and Laryngology of the College of Physicians; died, September 5, as a result of injuries received in an automobile accident.

August Henry Arp, M.D., Moline, Ill.; University of Iowa, College of Homeopathic Medicine, Iowa City, 1882; aged 56; a Fellow of the American Medical Association; a member of the Tri-State Medical Society, and of the Association of Railway Surgeons; formerly health commissioner of Moline; died at his home, September 14, from heart disease.

Joseph Orlando Orr, M.D., Toronto, Ont.; Victoria University Medical School, Coburg, Ont., 1884; aged 56; a member of the British Medical Association; the British Laryngological Society, and the Dominion Medical Association; in 1903 he became manager and secretary of the Canadian National Exhibition; died suddenly at his home, August 22.

John Gardner, M.D., LaGrange, Ohio; Rush Medical College, Chicago, 1872, and Missouri Medical College, St. Louis, 1876; aged 75; formerly president of the California State Board of Health, and for three years a surgeon-general in the Army, being stationed at the Fiji Islands; died at the home of his son, September 4, from epithelioma of the tongue.

Robert E. Green, M.D., Gainesville, Ga.; Southern Medical College, Atlanta, Ga., 1868; for many years president of the Georgia Manufacturing Company; a member of the board of trustees of the Georgia Normal and Industrial College, Milledgeville; who built and operated the first street car line in Gainesville; died at his home, September 6.

Robert J. Christie, M.D., Quincy, Ill.; University of Pennsylvania, Philadelphia, 1890; aged 53; a Fellow of the American Medical Association; a member of the Illinois State Medical Society, the Western Surgical Association, and the American College of Surgeons; died suddenly, September 8, from cerebral hemorrhage.

John M. Quigley, M.D., San Francisco; Willamette University, Salem, Ore., 1892; aged 50; formerly a member of the Medical Society of the State of California; formerly a physician to St. Francis' Girls Directory and Orphanage; died at St. Mary's Hospital, September 12, from injuries received in an automobile accident.

George William Hazelton, M.D., Manchester, N. H., Columbia University College of Physicians and Surgeons, New York, 1884; aged 59; formerly a Fellow of the American Medical Association; a member of the New Hampshire Medical Society; died at his home, September 13, after an illness of one day.

Warren D. Silkman, M.D., Manhattan, Kan.; University Medical College, New York, 1893; formerly a member of the Kansas Medical Society; in charge of the medical work among the cantonment workers at Camp Funston; died, about September 7, from injuries received in an automobile accident.

Nic. Jose Pinault, M.D., Pass Christian, Miss.; Laval University, Faculty of Medicine, Quebec, 1874; aged 71; for many years Hennepin County physician, and a Minnesota representative at the International Medical Congress, in Rome, 1894; died at his home, September 8, from heart disease.

Arthur Tallas Yeilding, M.D., Portland, Ore.; University of Pittsburgh, Pittsburgh, 1909; aged 33; a member of the Oregon State Medical Association; a member of the staff of St. Vincent's Hospital, Portland; died at Bremerton Naval Hospital, July 16, from cerebral meningitis.

Leslie Thomas Page, M.D., Wilmington, Vt.; University of Vermont, College of Medicine, Burlington, Vt., 1891; aged 51; a Fellow of the American Medical Association; a member of the Vermont State Medical Society; died at his home, July 21, from chronic interstitial nephritis.

Edwin A. Curry, M.D., Danville, Pa.; University of Pennsylvania, Philadelphia, 1889; aged 54; formerly a Fellow of the American Medical Association; for many years a member of the Pennsylvania State Medical Society; died at his home, September 6, from paralysis.

Frank Cornwall, M.D., San Francisco; Eclectic Medical Institute, Cincinnati, 1869; aged 71; formerly a Fellow of the American Medical Association; a member of the Pacific Coast Oto-Ophthalmological Society; died at Buena Vista, Mexico, August 30, from neuritis.

David Miller Dry, M.D., Philadelphia, Pa.; Jefferson Medical College, Philadelphia, 1913; aged 28; a member of the Pennsylvania State Medical Society; formerly pathologist to the Jefferson Hospital; died in the Jefferson Hospital, about September 7.

Edward Sherburne Blanchard, M.D., Charlottetown, P. E. I.; Columbia University College of Physicians and Surgeons, New York, 1872; aged 72; medical superintendent of the Falconwood Hospital for the insane; died at his home, about August, 1917.

John Bernard Donnelly, M.D., Gardner, Mass.; Harvard University, Boston, 1893; aged 50; formerly a Fellow of the American Medical Association; a member of the Massachusetts Medical Society; died at his home, August 2, from nephritis.

Charles G. Pratt, M.D., Sparta, Mich.; Illinois Medical College, Chicago, 1900; formerly a Fellow of the American Medical Association; died at his home, August 31, from nephritis.

Leroy Frederick Morse, M.D., Cobden, Ill.; Dartmouth Medical School, Hanover, N. H., 1863; aged 78; died in the Anna State Hospital from enterocolitis, July 7.

Frank E. Maine, M.D., Albany, N. Y.; University of Pennsylvania, Philadelphia, 1878; aged 60; died at the Albany Hospital, July 31, from cerebral hemorrhage.

Staten E. Griffin, M.D., Colorado Springs, Colo.; Ensworth Medical College, St. Joseph, Mo., 1900; aged 46; was drowned while bathing at Mazatlan, Mex., August 29.

Thomas Jefferson Shreves, M.D., Des Moines, Iowa; Rush Medical College, Chicago, 1857; aged 82; died at his home, September 7, from senile debility.

Stewart W. Aldrich, M.D., Des Moines, Iowa; Cleveland Homeopathic Hospital College, Cleveland, 1874; aged 66; died at his home, September 3.

Amos Alexander Wheeler, M.D., Miami, Mo.; Bellevue Hospital Medical College, New York, 1868; aged 74; died at his home, about August 30.

Jefferson D. Cole, M.D., Newbern, Tenn.; Vanderbilt University, Nashville, Tenn., 1884; aged 55; died at his country home, August 29.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION

ESKAY'S NEURO PHOSPHATES

Report of the Council on Pharmacy and Chemistry

For the information of the profession the Council has prepared and authorized for publication the following report on Eskay's Neuro Phosphates. W. A. PUCKNER, Secretary.

Eskay's Neuro Phosphates (Smith, Kline & French Co., Philadelphia) is offered to physicians under the claims that it contains alcohol, 17 per cent., and sodium glycerophosphate, 2 grains, calcium glycerophosphate, 2 grains, and strychnin glycerophosphate, 1/64 grain, in each dessertspoonful. It is called a "Nerve Tissue Reconstructive," and its advertising claims are based on the discredited theories that certain disorders are due to a deficiency of phosphorus in the nerve structure of the body, and that glycerophosphates are assimilated more readily than ordinary phosphates. This assumption was based on the knowledge that the lecithins, which form a part of the nerve structure, contained the glycerophosphate radical in the molecule. In line with this, Smith, Kline & French Co. aver:

"Eskay's Neuro Phosphates is of marked value in many acute and chronic conditions, in nervous exhaustion following mental and physical strain, neurasthenia, paralysis, anemia, tuberculosis, marasmus, debility and wasting diseases generally, and the nerve-weakness of the aged. It is particularly useful in convalescence from acute diseases and in the nervous condition following la grippe."

In its report on "The Therapeutic Value of the Glycerophosphates" (THE JOURNAL, Sept. 30, 1916, p. 1033) the Council pointed out that the therapeutic use of the glycerophosphates was based on the assumption that the inorganic phosphates cannot supply the body's needs of phosphorus or that the use of organic compounds "spared" the system the necessity of making such synthesis. The report presented evidence to show that the glycerophosphates are not absorbed as such, but that they are split into inorganic phosphates before absorption. The Council showed that there was convincing evidence that the animal organism synthesizes its complex organic phosphorus constituents from inorganic phosphates, and that organic phosphorus is of no more value as a food than inorganic. Despite this the Neuro Phosphates advertising makes use of the fallacious assumption regarding the action of the glycerophosphates.

Pleading for the particular mixture represented by the proprietary, it is asserted that:

"Sodium glycerophosphate is of special value in neurasthenia, Addison's disease, phosphaturia and phthisis."

and that calcium glycerophosphate "is employed in bone fracture, rachitis, tuberculosis and various wasting diseases."

The phosphorus content of 1/64 grain of strychnin glycerophosphate is ridiculously small. Yet it is asserted that this strychnin salt is of superior value because it combines the effects of strychnin with a "food-like form of phosphorus." Eskay's Neuro Phosphates has an acid reaction which is capitalized, thus:

"Experiments have shown that the acid glycerophosphates are more rapidly absorbed and are more efficient than the neutral salts."

And as a further illustration of extravagant claims:

"As a glycerophosphoric acid in the form of lecithin is normally present in spermatozoids, it is but natural that the glycerophosphates should exhibit aphrodisiac effects (as has been observed), but this result does not seem to obtain in all cases."

Is this a clumsy attempt to exploit this "nerve phosphate" as a "lost manhood" cure?

The Council held Eskay's Neuro Phosphates ineligible for New and Nonofficial Remedies because unwarranted therapeutic claims are made for it and because the administration of strychnin, calcium, phosphate and alcohol is not conducive to rational therapeutics, particularly when such a mixture is marketed under a name which indicates but one of its constituents.

K-Y LUBRICATING JELLY

Report of the Council on Pharmacy and Chemistry

Because of inquiries received, the Council has authorized publication of the following report declaring K-Y Lubricating Jelly inadmissible to New and Nonofficial Remedies.

W. A. PUCKNER, Secretary.

K-Y Lubricating Jelly (Van Horn and Sawtell, New York), originally advertised as a lubricant for instruments and the hands, is now also recommended as a therapeutic agent. If the claims for "K-Y" were limited strictly to such effects as result from the purely mechanical properties of a lubricant, it might be held that it would not come under the purview of the Council. The preparation, however, while introduced as a lubricant, is now offered for a broader field of use, and the manufacturers make claims which are not supported by any evidence available to the Council. Evidence the following, taken from a circular that accompanies the package:

"K-Y allays smarting and burning at once through its pronounced soothing and cooling effects, and thus makes an admirable dressing for burns."

"Many physicians make a practice of anointing the bodies of their measle and scarlet fever patients with 'K-Y', in this way affording gratifying relief from itching and irritation, and effectively preventing dissemination of infectious material."

And this from another circular:

"I had one of the most troublesome cases of pruritus vulvæ that I had ever seen. I guess I must have tried everything and the case had been referred to me by another man, who had previously tried everything, including cauterization. Well, one day I was examining her, and of course K-Y on the speculum—the irritation seemed to quiet down, and the following day she said she felt no effects from it at all. Then later on, it returned, and I couldn't imagine what had done so much good, unless it could have been the lubricant, so I told her to buy a tube, which she did. Every once in a while she has a return of it slightly, but she just applies K-Y and clears it all up."

The manufacturers state that they do not know why K-Y is so soothing, but suggest:

"Possibly the cooling action of the combination, and the effect of the 4% boric acid contained, are factors that enter. Be all that as it may, the fact certainly remains that oftentimes, after other local measures fail, 'K-Y' Lubricating Jelly gives relief."

Elsewhere it is claimed to be germicidal, and to give relief in other conditions, thus:

"Diabetic and uremic irritations, not only of the genitalia, but of other parts, have been found fully as amenable as pruritus vulvae to the soothing influence of 'K-Y' Lubricating Jelly, especially if the previous application is removed with water every time a new one is put on."

The foregoing citations are obviously intended largely for the public, and make it plain that "K-Y" Jelly is not in the class of nonmedical and harmless external applications; on the contrary, these claims tend to create the impression that the spread of measles and scarlet fever can be *prevented* in the stage of desquamation. To place such statements in the hands of the patient supported by the tacit endorsement of a prescription is to create a false and dangerous sense of security and to lead to a failure to observe other and more important means of preventing dissemination of these diseases.

The Council held K-Y Lubricating Jelly in conflict with Rules 1, 4, 6 and 10, and authorized publication of this report.

The Medical Officer Must Be an Administrator.—The army medical officer of today must not only be a trained scientist but a capable administrator. In other words, his duties in the zone of advance, the line of communications, and the interior, are in every respect as onerous and exacting as those of the line or engineer officer, and the story of his accomplishment, in the present war, will, when told, make a brilliant record.—Lieut.-Col. C. C. McCulloch, Jr., U. S. Army: The Scientific and Administrative Achievement of the Medical Corps of the United States Army, *Scientific Monthly.*

Correspondence

OBSERVATIONS OF MEDICAL SERVICE ABROAD

To the Editor:—I have recently visited many European military hospitals, including first aid stations, clearing hospitals, and third line or base hospitals. In many places I have found American surgeons actively engaged and doing splendid service. In several large well-equipped hospitals the service is light and many beds are empty. In such cases the surgical staff is for protracted periods more or less inactive.

It is to be feared that at first men who had come from large hospitals in America, having enjoyed an active daily service normally, were surprised, not to say disappointed, to find time hanging heavily on their hands. This feeling was soon corrected and surgeons are now interesting themselves in the solution of problems of various types which are constantly developing.

Briefly the military surgeon of today must be forewarned that war is not waged for the purpose of filling hospitals, and he must be fully reconciled to wait patiently under his assignment. After an advance resulting in a large casualty list, he will lead a strenuous life for a more or less protracted period. Empty beds with idle ambulances in large number are not a regrettable feature of military life.

It should be further clearly understood that men who have specialized and who are highly trained will find their services acceptable at many points. But the average man, however capable, must win his spurs under new conditions before he can hope to become conspicuous in a foreign environment.

THOMAS W. HUNTINGTON, M.D.,
Hotel Excelsior, Rome, Italy.

[EDITOR'S NOTE.—Dr. Huntington (of San Francisco) is a member of the American Red Cross Commission to Italy. This committee consists of Mr. George F. Baker, Jr., chairman; Mr. John R. Morron, Dr. Victor G. Heiser, Dr. Thomas W. Huntington and Mr. Nicholas F. Brady.]

DRAFTING PREMEDICAL STUDENTS

To the Editor:—The question of the exemption of freshman medical students is one on which there has been much discussion, and perhaps the readers of THE JOURNAL would be interested to know the attitude of one who has been drafted, and called into service.

THE JOURNAL has been for some time my constant companion in my hours of leisure and in these times, at least, my consolation that I might find at the last moment some hopes of continuing my medical work next year.

The last number, that of September 15, contained a very encouraging letter from the dean of the University of Virginia, department of medicine, which prompted this letter. He has stated my case, as well as that of many more in the same predicament.

We were told when the war first broke out between the United States and Germany that medical students would not be subject to call in case of draft and that "premedics" might be considered as medical students. When the draft became a reality, and the exemption lists included no clause for us we were still told that it was only diplomacy that kept the government from declaring a class exemption of medical students. Some of us rather doubted this and spoke of entering officers' training camps; then the dean of the school of medicine came out with a letter from a high official from Washington stating for a fact that we were free. Now many of us had already had military training in various lines and could have easily earned our commissions but were told that we could better serve our country by staying in school and then giving her a trained instead of an untrained service. Some of the boys disregarded this and went to the camps; they are now going about with silver bars on their shoulders; proud that they were counted as worthy to be officers in the great National Army, while we who thought we were best serving our country by staying in school are going about with our hands on our hearts wondering what will be done with us next. In fact some of us have ceased wondering as we are called in the first draft. It is not as though we were trying to avoid the draft or hiding under the banner of our college, afraid to go. I venture to say that if the plain truth had been told us in the first place there would not have been one of us who would not have been in some branch of the service before the day of registration.

An objection raised is that the medical schools would be crowded with slackers and draft dodgers of every description. This immediately loses its significance when we realize that every medical school requires some premedic work and that premedic work no one would take who did not intend to pursue the further study of medicine. The fact that we entered last September in the premedical department of the university proves that we had then determined to study medicine, and hence according to all justice should be considered medical students, and exempt from draft under that clause.

It is not as though the government had no redress for those who tried to evade her orders by entering medical schools at this time; the questions of standards of scholarship and attendance could be brought to bear on all medical students in the freshman year at this time. The government could very easily require a certain minimum grade and a minimum standard of attendance, all those falling below either of which to be at once liable for call and military service. This could be very easily accomplished by utilizing the professors of military surgery that the government assigns to the various medical schools. So there is absolutely no excuse for such a drastic, not to say unjust and outrageous, procedure on the part of our government.

Furthermore, the demand for doctors at the end of the next four years is going to be just as great if not greater than it will be at the end of the next year and two following. This has been amply proved by authentic statistics available to all those who care to take the time to peruse the recent editions of the daily papers or, for the profession, the last three or four editions of THE JOURNAL. Under these circumstances it seems not only unjust but absolutely prohibitive and criminal that the government at this time should undertake to jeopardize the future healthful well-being of this country as well as those across the sea by exposing these young men to the dangers and possible casualties, not to speak of the many fatalities, of this war.

This does not exhibit on our part any lack of patriotism or love of country, but rather shows that we have the great welfare of the country at heart for the future, and should this war last—which God forbid—beyond the next four years, the need of physicians would be an obstacle that would be absolutely insurmountable. At any rate, the next two years would fit us to be of infinitely more value as assistants in the Medical Corps than we are now as riflemen. Any one can learn to shoot a gun in an hour but it takes much longer for one to acquire skill in manipulating a scalpel.

PHILLIP J. BEYHAN, Chicago.

"RED CROSS" BASE HOSPITALS

To the Editor:—My attention was directed to a contribution by Dr. Joseph B. DeLee (THE JOURNAL, Aug. 24, 1917, p. 665), advocating the construction of military hospitals in France in the shape of a cross with roofs to be painted in red color. In view of the deliberate bombing of an American base hospital by German flyers and the resulting killing and maiming of innocent "noncombatants," the doctor's plan would produce the very opposite effect he aims at. The best plan is to make all sanitary formations and institutions as invisible as neutral tints can render them. In addition it would be wise to disperse the buildings of large institutions over a fairly wide area and to place them under the shelter of natural foliage, or artificial for that matter, schemes employed to hide artillery batteries from aerial reconnaissance. In view of the fact that antiaircraft guns are effective only when the machines fly at moderate height we may even have to go farther and construct hospitals under bomb proofs.

Time was when the emblem of the Red Cross stood for the humanitarian in warfare, but today it is a beautiful target for the enemy's policy of frightfulness. In the same sense the putting on of a brassard by sanitary personnel on the firing line would only tend to increase their mortality and casualty rate. I have in my field library a book entitled "Rules of Land Warfare." I read it before my last promotional examination some time ago, but I have not opened it since the present mobilization for obvious reasons.

GUSTAVUS M. BLECH, M.D.
Major, N. G., Ill., Camp Logan, Houston, Texas.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

EOSINOPHILIA

To the Editor:—1. What is the significance of eosinophilia? 2. What is its diagnostic and prognostic significance in arthritis, periarthritis and periostitis of the spine? 3. Does it occur in malignant diseases? 4. Please give references to the best recent books and articles on infections of the spine.

E. W., Evansville, Ind.

ANSWER.—1. Eosinophilia is physiologic in childhood, the average increase being about 1 or 2 per cent. above the normal adult finding. There are some racial distinctions. The natives of southern China show between 15 and 20 per cent. of leukocytes as eosinophils. Pathologic eosinophilia occurs in splenomyelogenous leukemia, in sarcoma, osteomyelitis, osteomalacia, chlorosis, secondary anemia following infection, extirpation of the spine, chronic splenic tumors, bronchial asthma, emphysema, pemphigus, eczema, psoriasis, urticarias, leprosy, herpes zoster, and other skin diseases associated with toxic agents. They are also sometimes found increased in scarlet fever, acute rheumatism and malaria, as well as sometimes in syphilis, gonorrheal infections and in forms of ovarian diseases with the exception of cancer. Any parasite, from pin worms to uncinarias, may cause an eosinophilia which is not necessarily constant, and does not bear any relation to the severity of the infection. 2. Its relation to infections of the bones would be of the same character as its relation to the infections and bone diseases mentioned in the previous answer. 3. No great weight could be attached to eosinophilia in making a diagnosis of malignancy. 4. The following are recent articles on infection of the spine:

L. P. Gould: Osteomyelitis of the Spine, The Lancet, 1917, **1**, 374.
D. N. Eisendrath: Osteomyelitis of the Spine, American Surgeon, 1917, **65**, 147.
A. Kinder: Osteomyelitis of the Spine, New Zealand Medical Journal, 1915-1916, **14**, 215.

CHOICE OF ANESTHETIC—RESPONSIBILITY

To the Editor:—(*a*) Please inform me who should make the choice or selection of an anesthetic for a hazardous surgical case, the expert anesthetist or the operating surgeon?

(*b*) On whom does the responsibility rest if a patient should die from an anesthetic, on the operating surgeon or on the expert anesthetist?

THOMAS G. ALLEN, Philadelphia.

ANSWER.—(*a*) The operating surgeon.
(*b*) On the operating surgeon.

Tetanus in Court Plaster.—Investigation by the Hygienic Laboratory of the Public Health Service following press reports of infection with tetanus from court plaster, resulted as follows, as given in *Public Health Reports*, September 7: Out of thirteen specimens examined, two were found to be contaminated with tetanus bacilli. The specimens examined were procured from drug stores in the original packages as they go to the consumers. It was found that court plaster is not clean in the surgical sense, but whether the contamination with tetanus bacilli occurred during the process of manufacture through infected ingredients will be the subject of another investigation. It is not believed that the contamination was intentional. The report of the laboratory investigation is given in full in the publication referred to.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

ARIZONA: Phoenix, Oct. 2-3. Sec., Dr. John Wix Thomas, 306 Goodrich Bldg., Phoenix.

CALIFORNIA: Los Angeles, Oct. 9-13. Secretary, Dr. Charles B. Pinkham, State Capitol, Sacramento.

COLORADO: Denver, Oct. 2. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.

DISTRICT OF COLUMBIA: Washington, Oct. 9-11. Sec., Dr. Edgar P. Copeland, The Rockingham, Washington, D. C.

GEORGIA: Atlanta, Oct. 9-11. Sec., Dr. C. T. Nolan, Marietta, Ga.

IDAHO: Pocatello, Oct. 2. Sec., Dr. Charles A. Dettman, Burke.

ILLINOIS: Chicago, Oct. 9-11. Superintendent of Registration, Mr. F. C. Dodds, Springfield.

IOWA: Des Moines, Oct. 9-11. Sec., Dr. G. H. Sumner, State House, Des Moines.

MICHIGAN: Lansing, Oct. 9-11. Sec., Dr. B. D. Harison, 504 Washington Arcade, Detroit.

MINNESOTA: Minneapolis, Oct. 2-5. Sec., Dr. Thomas S. McDavitt, Lowry Bldg., St. Paul.

MONTANA: Helena, Oct. 2. Sec., Dr. William C. Riddell, Power Bldg., Helena.

NATIONAL BOARD OF MEDICAL EXAMINERS: Chicago, Oct. 10-18. Sec., Dr. J. S. Rodman, 2106 Walnut St., Philadelphia.

NEW JERSEY: Trenton, Oct. 16-17. Sec., Dr. Alexander MacAlister, 438 E. State St., Trenton.

NEW MEXICO: Santa Fe, Oct. 8. Sec., Dr. R. K. McClanahan, East Las Vegas.

NEW YORK: Albany, Buffalo, New York City and Syracuse, Oct. 2-5. Chief, Examinations Division, Harlan S. Horner, State Education Bldg., Albany.

OKLAHOMA: Oklahoma City, Oct. 9-10. Sec., Dr. Ralph V. Smith, 502 Daniel Bldg., Tulsa.

PORTO RICO: San Juan, Oct. 2. Sec., Dr. M. Quevedo Baez, San Juan.

RHODE ISLAND: Providence, Oct. 4-5. Sec., Dr. Byron O. Richards, State House, Providence.

UTAH: Salt Lake City, Oct. 1-2. Sec., Dr. G. F. Harding, Templeton Bldg., Salt Lake City.

WYOMING: Laramie, Oct. 10-12. Sec., Dr. H. E. McCollum, Laramie.

Book Notices

PHYSICAL CHEMISTRY OF VITAL PHENOMENA, FOR STUDENTS AND INVESTIGATORS IN THE BIOLOGICAL AND MEDICAL SCIENCES. By J. F. McClendon, Assistant Professor of Physiology in the University of Minnesota. Cloth. Price, $2 net. Pp. 240, with 30 illustrations. Princeton: Princeton University Press, 1917.

Physical chemistry, that lusty infant prodigy, offspring of the union of physics and chemistry, has already come in many instances to the assistance of the practitioner, giving aid in diagnosis and helping in the explanation of physiologic processes. One has only to recall the most recent innovations of the determination of the hydrogen ion concentration of the blood and spinal fluids, the diagnosis of syphilis by the colloidal gold test, or the distinguishing of epidemic cerebrospinal meningitis from tuberculous meningitis by the cataphoresis of the proteins of the spinal fluid. Hence a book of this title should attract the interest of practitioners and students alike. This book, however, makes no pretense to having been written for clinical men. It is rather intended for advanced students who already understand much about the subject. It contains many interesting facts for such students, and quite a long and useful literature list at the back in which both titles and authors are cited. It treats of such things as osmotic pressure, adsorption, hydrogen ion determinations, surface tension, enzyme action, permeability of cells, anesthesia and narcosis, cytolysis and disinfection, ameboid motion, muscle contraction, oxidations, artificial parthenogenesis and cell division. Truly an appetizing bill of fare, if only well cooked and seasoned!

But alas for the "if." It is not well cooked; much of it, indeed, is quite raw, and the seasoning has been generally omitted, so that even a robust appetite will not make it all palatable. This is not saying that there is not much that is good in the book and many facts that are stimulating and instructive. The chapter on the method of hydrogen ion determination is decidedly worth while; and the book is certainly no worse than many German books on similar lines. Perhaps the title makes us expect too much, and in the outcome we have so little—so little except words, and of these

there are so many and such long ones! There is hardly a properly formed scientific statement in the first chapter. It is full of conclusions and interpretations stated as if they were facts, and of conclusions which do not follow from the premises. Throughout the book there is a scarcity of objectively described facts. Almost never do we find a clear, simple statement of what the objective facts really are; always these facts are obscured by interpretations, or the interpretations are substituted for them.

The author, in accordance with the prevailing style of the hour, attempts to explain all the phenomena of life by inventing what he calls a plasma membrane and putting it around a colloidal solution and calling it protoplasm. Since he is the inventor of this membrane, it is his privilege to make it as ingenious as he can. The main differences between the theories of the physical-chemical zoologists and physiologists at the present time consist in the ingenunity of their imaginary membranes. If only these membranes are sufficiently complex, it becomes possible to explain all the phenomena of life by means of them. If any new facts are discovered which the old membrane cannot account for, it becomes the simplest thing in the world to take that membrane off, to devise a new one with more modern improvements, wrap it about a colloidal solution of a nondescript character, and there you have protoplasm! This membrane has pores in it so graduated in size or otherwise so constructed that they let through positive but not negative particles, and, behold! there is the explanation of the electrical phenomena of protoplasm. Or sometimes the pores close, and then you have anesthesia. And so on. To explain how this is all possible it is only necessary to fall back on surface tension. Surface tension explains all things. This is a perfectly safe refuge and one calculated to satisfy the greatest doubter, for no one understands what surface tension may be doing in such complex systems, and almost no one understands it even in the simplest cases. In saying this we do not aim especially at the author of this book, for he has only put together the publications and conclusions of other men; but we are aiming at the whole glib, superficial school of biologists, who pretend to solve fundamental problems of the greatest complexity.

This book is typical of much of modern biology. It is not possible to say about it anything worse than this. Biology is in a period of inflation. Real values are obscured. Worthless properties are being worked as fabulously rich mines, but the ore contains only a trace of real metal. A little glitter and some mathematical formulas lead astray all but those who have been already once deluded. Words take the place of real explanations; we have purely verbal solutions of the most abstruse problems. These words lull us to sleep; they form a wire entanglement, serving to keep out truth and light.

One comes back from reading a book of this character, and most books on this subject, with the feeling of having been wandering in a terrible morass. Some of the ill smelling mud still clings to one. "Permeability" and "adsorption" are words covering a multitude of scientific sins. This must truly be the red light district, the demi-monde of science, which intoxicates and ruins its habitués. This realm of biology is truly that demiscience which Paul Shorey anathematizes. Words juggled from one meaning to another; conclusions unrelated to their premises; a trackless waste—the biologic authors wander through this series of sink holes, struggling out of one only to fall into another, and the reader, if he is not sure of foot and alert of eye, falls with them.

THE TREATMENT OF TABETIC ATAXIA BY MEANS OF SYSTEMATIC EXERCISE. By Dr. H. S. Frenkel, Medical Superintendent of the Sanatorium "Freihof" in Heiden (Switzerland). Second English Edition by L. Freyberger, J.P., M.D., M.R.C.P. Cloth. Price, $3 net. Pp. 209, with 130 illustrations. Philadelphia: P. Blakiston's Son & Co., 1917.

The first edition of this book, which is an adaptation and not a translation of Dr. Frenkel's book, appeared in 1902. In the second edition, revised by Dr. Freyberger, "redundaces" have been removed, a few unnecessary illustrations taken out, and the remainder partly regrouped. "Notes on the medical treatment that is often required during Frenkel treatment" are added by Dr. Freyberger.

A number of changes in the make-up of this edition reflect credit on the former one. In size it conforms more readily to standard volumes; the illustrations are not so clear. The legends of some of the diagrams which were left untranslated in the former edition are rendered into English. Some of the measurements of diagrams are omitted, and in some errors appear, as 9 inches for 63 ct. Certain important statements marked by italics in the former edition are left unemphasized.

The text, as in the former edition, presents a clear and comprehensive exposition of a method of treatment which deserves wider recognition and more general application. Frenkel introduces in a general part his description of the method by broad definitions of coordination, and ataxia. He reviews the theories of the causes of ataxia, and describes and upholds the sensory theory. A full description of methods of examining the sensibility is given, and an extensive description of muscular hypotonia, which plays so important a rôle in the disability of the tabetic, is presented.

In a special part, the mechanism of movements of the human body is described, so that the rationale of the following directions for treatment is established, and the exercises may be followed logically and clearly. The practice rooms and apparatus, which are very simple, are described, and the exercises classified, minutely explained and commented on freely. The large number of illustrations assists in making the book one which, if read, cannot but lead to a clearer understanding of tabetic ataxia by the general practitioner, and to the more consistent employment of reeducational methods by specialist and general practitioner as well.

It is impossible to omit a criticism of the more or less parasitic notes on the medical treatment of tabes dorsalis which are added by Dr. Freyberger. Among other things, the author demands that before the case should be definitely pronounced nonsyphilitic, an examination of the spinal fluid should prove "an entire absence of spirocheta pallida," whereas nothing is said of the cell count, the colloidal gold chlorid test, or globulin tests which, in contrast to the *Spirochaeta pallida*, are so frequently found pathologic.

Just why intravenous or intramuscular injections of antisyphilitic medication are interdicted during the period of Frenkel treatment is left as great a mystery as why we should defer Frenkel treatment until "the effects of the antisyphilitic treatment are beginning to be well established."

The author states that the following preparations will be found useful in the preliminary treatment, and he includes with salvarsan and neosalvarsan such agents as collargol, sodium and gold chlorid, and various proprietary combinations, as Enesolum, Iodglidinum, and Ioha. Although he states that salicylate of mercury is the best substitute for mercurial inunctions or injections of mercurial oil, he describes neither one.

The author's preference for proprietary remedies is seen in his collection of choice drugs for symptomatic treatment: Trivalium, Arsentriferrolum, Bromo-lecithinum, Diplosalinum, Hedonalum, etc. Combretum for morphinism occupies as much space as is devoted to salvarsan.

Nothing at all is said of intraspinal treatment. Apparently Freyberger does not believe that all cases of tabes dorsalis are syphilitic, as he says that "iodides are excellent tonics in nonsyphilitic cases of tabetic ataxia."

An adequate criticism of this chapter would take up more space than the chapter itself, which might better have been omitted.

Habit.—Habit keeps us all within the bounds of ordinance, and saves the children of fortune from the envious uprisings of the poor. It alone saves the hardest and most repulsive walks of life from being deserted by those brought up to tread therein. It keeps the fisherman and the deckhand at sea through the winter; it holds the miner in his darkness, and nails the countryman to his log cabin and his lonely farm through all the lonely months of snow. In most cases, by the age of 30, the character has set like plaster, and will never soften again.—William James.

Social Medicine, Medical Economics and Miscellany

BARON LARREY, THE FRENCH ARMY SURGEON

HOWARD D. KING, M.D.
NEW ORLEANS

Seventy-five years have elapsed since the death of Baron Larrey, surgeon-in-chief of the armies of Napoleon. In the annals of military surgery Larry will forever stand pre-eminent as a leader. In this hour of stress and conflict a brief biography to the famouns French army surgeon should prove timely.

D. J. Larrey was born in 1766, at Beaudéan, near Bagnères-Adour, Haut Pyrénnes. His parents were in modest circumstances, but of good peasant stock. At the age of 13, with very little previous education, he was sent to study under his uncle, who was surgeon and professor of surgery of the General Hospital at Toulouse, and also an associated correspondent of the Royal Academy of Surgery at Paris. At Toulouse under the guidance of this relative he passed through the usual medical courses. In 1787 he went to Paris, and was in this city only a few days when he received the appointment of assistant surgeon in the navy, a post which he accepted only because it enabled him to indulge his natural taste for traveling. Larrey was ordered to join his ship at Brest, but his resources were so low that he walked from Paris to that port, and on his road he visited Laval, sought out the house where Ambroise Paré, the father of French surgery, lived, desired to see his chamber, and, yielding to the delusion of a warm imagination, almost fancied his great predecessor to be present.

APPOINTMENT AS SURGEON IN NAVY

On his arrival at Brest he was subjected to a second examination, and passed in such a distinguished manner that, contrary to all precedent, he was appointed full surgeon at the age of 21, to a small frigate, *La Vigilante*. The ship being delayed in port during the winter he employed himself in giving lectures to the young students in anatomy and surgery. In the following April the ship sailed for Newfoundland, to protect the cod fisheries, and to cruise off the coasts of North America. This voyage was without event, save that on reaching Brest in 1788 the provisions had run so low that each member of the crew was reduced to a daily ration of 4 ounces of biscuit and a bottle of putrid water. Again on shore Larrey immediately set off for Paris, and studied clinical surgery under Sabatier and Desault, the latter of whom he speaks of as a surgical genius, and as one to whose instruction he felt greatly indebted.

At this critical period the first clouds portending the French revolution were fast gathering in the political horizon, and civil dissensions had already risen to such a height in Paris that several battles were fought in the garden of the Tuileries, at the Bastille, and in the Champs de Mars. A large number of the wounded combatants came under the immediate care of Larrey, who thus early observed that delay in amputation after certain gunshot wounds caused an increase in tetanus. He also gave a great deal of his time to the study of the problems of infections and bone necrosis.

CREATION OF AMBULANCE VOLANTE

The invasion of France by the continental powers shortly following, he was appointed full surgeon to the Army of the Rhine, commanded by Marshal Luckner, and he joined on April 1, 1792. It was in this campaign that he observed the faulty arrangement of the ambulance service, which it was customary to station a league in the rear of the soldiers, so that the wounded were left undressed and unattended till after the battle, when they were removed to the regimental hospitals. Owing to the great obstruction of the roads by baggage and the movements of the troops, it was often days before the wounded received surgical assistance, and as a consequence many perished for want of timely first aid. Larrey proposed to General Custine to establish an *ambulance volante*, or a means by which the wounded might receive first aid on the battlefield. This reform produced a great sensation in both military and medical circles. At the close of the campaign on the Rhine the military surgeons were highly spoken of by General Beaurharnios, in his despatches to the Directory, and Larrey was ordered to Paris to complete his *ambulance volante*, and to adapt and introduce it into the other armies of the Republic.

LARREY'S SERVICE IN EGYPT

In the year 1797, after having seen service in Spain, he received orders, apparently at the request of Napoleon, to set out for Italy, and to establish the *ambulance volante* in that army; but hardly had he arrived at headquarters when the peace of Campo Formio was signed. Next Bonaparte committed the great military error of transporting a French army to Egypt, at which time he demanded that Larrey join the expedition. In this position Larrey earned the high regard of the Corsican. He was with Bonaparte when he crossed the Red Sea and it was at this time that Larrey nearly lost his life by drowning.

AN OFFICER OF THE LEGION OF HONOR

The peace of Amiens saw Larrey back in France, and on his arrival in Paris he found Napoleon first consul, who not only ordered Berthier, in a public document, to express his satisfaction at the zeal and manner in which he had fulfilled his public duties, but confirmed all the medical officers he had promoted in Egypt, named him surgeon-in-chief to the Consular Guard, and presented 1,500 francs to Madame Larrey. On Napoleon assuming the purple Larrey was one of the first named of the Legion of Honor. Bonaparte afterward created him an officer of the Legion, presenting the decoration with his own hands. Following this appointment Larrey was made Inspector General of the French Army. But he was to be still further honored, for after the battle of Eylau he was promoted to the rank of Commandant of the Legion of Honor, Chevalier of the Iron Crown, and, after the battle of Wagram, he was made Baron of the Empire, with a pension of 5,000 francs. At this juncture his good fortune ceased, and on the first deposition of the emperor he proposed to retire with him to Elba, and to share his banishment, but Napoleon opposed this mark of devotion in his faithful friend. "You belong to the army," he said, "and must continue with it; but I part from you with the deepest regret."

Almost immediately after his escape from Elba, Napoleon despatched a messenger to the Tuilleries for Larrey, and after displaying the most touching regard and satisfaction at seeing his old friend, declared, "I hope soon to have the opportunity of recompensing you for the sacrifices you have made, and for the services you have rendered the wounded." One of those *coups de theatre* with which the returned emperor attempted to support his power was summoning deputies from the different provinces to receive a tricolored standard. Larrey was among those elected for the Haut Pyrénnes, and the emperor selecting him from the rest, placed the emblem of French military glory in his hands, expressing his delight in entrusting it to a man who honored humanity by his disinterestedness and courage, and whom he had often seen in the parching deserts of Lybia giving to others the water and wine he greatly needed for his own support.

When the preparations for opening the fatal campaign of 1815 were completed Napoleon sent General Drouet to Larrey with orders to join the army, and more especially to direct the ambulance of the guard, and to be near his person. It was at Waterloo after the tide of battle had turned against the French, and the charges of the British cavalry had nearly reached the French ambulances, Napoleon still remembered his friend, and sent one of his aides-de-camp to point out to Larrey a cross road by which he might escape. He had not proceeded very far when he was chased by the Prussian cavalry, but was fortunate to outdistance his pursuers. In his flight he was thrown from his horse to the ground where he lay for some time unconscious. On recovering conscious-

ness he again attempted flight but fell in with the Prussian cavalry a second time and was made prisoner at Sambre. The Prussians stripped him of everything but his redingote, and in this forlorn state he was happily mistaken for Napoleon, and carried with his hands tied behind him to Commandant Bulow, by whom he was recognized. Larrey had saved the life of Prince Blucher's son, who had been seriously wounded, and made prisoner during the German campaigns, and this act of kindness being remembered Larrey was now treated with much consideration, had his wounds dressed, more cleanly and commodious quarters assigned him, and afterward obtained permission to proceed to Brussels, in order that he might succor his wounded countrymen.

THE DOWNFALL OF NAPOLEON

After the downfall of Napoleon at Waterloo Larrey suffered many humiliations at the hands of the Bourbon dynasty. He was deprived of his office of inspector general, and all of his pensions cut off. He was retained, however, as surgeon of the guard, for fear, as he alleged, that the troops would mutiny at his removal. From 1815 to 1818 his position was most trying, for among his misfortunes he lost his mother, and a favorite brother, a surgeon at Nismes. In 1818 his fortunes appeared to be on the mend. The pension of 3,000 francs granted him by Napoleon for services at Lutzen, Wurchen, and Wagram was restored to him by unanimous decree of the legislative assembly. The declining years of his career, also, were cheered by many honors and distinctions. The king of the Belgians invited him to organize the ambulance of his army, while Louis Phillippe granted him the decoration for his services to the wounded in the three days of July. He also made trips to Italy and England. His last official service to the French government was an inspection of the French hospitals at Algeria. On his return from Africa he set off for Paris to make his report to the governmen, but died en route at Lyons, July 25, 1842.

HIS SERVICE TO MEDICINE

Larrey's claims to distinction as a surgeon are great. That he was admirably fitted for the high professional offices he attained is today admitted by the whole surgical world. Up to the day of his death no one ever held a higher place as a military surgeon. It is impossible to study his works without being convinced of his sound sense and good judgment, and the rapid manner in which he interpreted disease and applied the resources of his art to the relief of the patient. On account of his boldness, which was coupled with a most skilful technic, Larrey enriched surgery with many and far reaching advances.

Before the last Revolutionary Wars there were scarcely more than two or three examples of amputation at the shoulder joint, an operation first performed by Ledran. This operation, however, Larrey frequently and repeatedly performed, and even extended, by removing large sections of the shoulder and scapula, and with such success that out of 111 cases, ninety-seven were cured. Modern hospital records show no greater achievement than this wonderful list of successes. The facility with which he performed this operation was quite wonderful, the limb being removed in two minutes, and the loss of blood negligible.

Up to Larrey's time it was the custom to delay amputations until the line of demarcation had formed. The impatience of Larrey refuted the wisdom of this surgical dogma, and with the French army surgeon it was always a case of now or never. Larrey had profited by the surgical experience of the surgeons who had participated in the American Revolution and the different Indian conflicts, who, having no great hospitals to which to send their wounded, performed most of their major operations on the field, and had lost very few men. These observations led him to adopt, as soon as the *ambulance volante* was introduced into the French armies, the practice of immediate amputation in the field. Larrey declares the advantages of this procedure to be great in that shock was considerably lessened, and the cases of tetanus considerably reduced. From the foregoing it can be seen that the trench dressing station of today is really an American institution revived. How much does modern military surgery owe to the medical men who served under Washington, Greene, Putnam, Wayne?

In the dressing of wounds it was his invariable custom, after cleansing away débris and trimming the parts, to apply loose bandages, and to allow them to remain on several days without being disturbed. Once the bandage was secured it was followed up by pouring some cold lotion over it till it became well saturated through and through. The wounds were always kept moist. This mode of treatment resembles, at least to some extent, the tissue lavage methods now in general use in war hospitals.

As a practitioner he was most resourceful in his therapeutic endeavors. His practice in syphilis was beneficial to the patient despite the criticism it engendered on the part of his confrères. Larrey was one of the first to use the mercurial ointment on the soles of the feet and other parts of the body. For this he was violently assailed in some quarters. His knowledge of syphilis was particularly acute, especially as to the effect this disease had on the arterial system.

As a surgeon he was highly practical, but if we view him as a physiologist or philosopher we shall find many false shadows. Let us look at his character as a man, and take that character from one best able to appreciate it, from Napoleon himself. It is well known that Napoleon left to Larrey by his will 100,000 francs, at the same time recording the notable fact that Larrey was the most virtuous man he had ever known. The manners and person of Larrey were endearing and simple. He will stand forever as one of the bright ornaments of French surgery. His place is beside Pasteur and the great Paré. His long and brilliant career in the military service of France entitles him to a niche in that hall of fame consecrated to those whose motto consists of the single word—duty.

820 Baronne Street.

Dehydration of Foods

It would seem that the old fashioned method of drying fruits and vegetables, which became almost obsolete since the rise of the modern canning industry, is again coming into vogue and is being extended to food products not heretofore subjected to this process. Instead of the primitive methods of the household in former days, however, improved, scientific and mechanical methods are being employed and are being adapted not alone to factories, but to the home and the farm, where products over and above present market demands may be dehydrated and placed on the market as required. Considering the large percentage of water in all fruits and vegetable products amenable to dehydration, the saving in bulk and weight is a transportation economy, as well as one of freight costs to the consumer, which is of great importance under present circumstances. As examples of products not heretofore saved as food, in addition to about all the vegetables and fruits raised on the farm, are beet tops, the outer green leaves of the stalks of celery, fruit on the point of becoming overripe, undersized fruits and vegetables which would otherwise waste, and many other products which will suggest themselves to farmers and gardeners. Practical and efficient apparatus have now been devised to dehydrate all such products cheaply and effectively on the farm. One such apparatus, described in the *Scientific American*, consists of a series of trays for containing the fruit or vegetables, one tray superposed on the other. The hot air as the agent of dehydration is applied to the bottom tray and passes upward through all the other trays, not passing off until completely saturated, thus economizing in the matter of heat. The contents of the lower tray become cured first, when this tray may be removed, the remaining trays dropped to occupy this space, and another tray of fresh product added at the top. The process thus becomes a continuous one. In the process of dehydration about 10 per cent. of the water is allowed to remain in the products, which prevents their structural disorganization and preserves their flavors and other natural qualities when cooked. The possibilities of the dehydration process in augmenting and making available large quantities of food heretofore not utilized to the best advantage will be apparent.

Medicolegal

Physicians May Testify as to What Is Learned After Treating Patients

(Strafford et ux. vs. Northern Pac. Ry. Co. et al. (Wash.), 164 Pac. R. 71)

The Supreme Court of Washington says that in this personal injury case a physician was asked to describe, and did describe, the nature and extent of an examination he made while the injured plaintiff was a patient in the hospital under his care, but was expressly warned by counsel not to state what he found as the result of his examination, and heeded the admonition. After he had answered counsel's questions he was asked whether he had made two subsequent examinations of the plaintiff and he stated that he had, but not as her physician or surgeon, or for the purpose of treating her, but for the purpose of enabling him to testify as to her condition. As to discoveries made at these two examinations he was permitted to testify fully. Clearly this was not error. As to these two examinations he was as competent to testify as any other physician or surgeon would be under the same circumstances. The fact that he had previously treated the plaintiff did not preclude him from testifying to matters he had subsequently learned as to her condition under circumstances not precluding his right to testify. In order to render a physician incompetent, the information he is called on to disclose must have been acquired while he was attending the patient in a professional capacity for the purpose of treating her ailments. The privilege when the examination is made by the physician for the express purpose of publishing the results; such, for example, as testifying in an action for personal injuries. There was therefore no error committed in the admission of the physician's evidence. The same was true of the testimony of another physician who, while he had formerly treated the plaintiff in a professional capacity, testified to no condition the knowledge of which was acquired by him while so treating her. He also subsequently examined her under circumstances similar to those related of the physician first mentioned, and testified to conditions learned at such examination. The statutory rule was not violated in permitting him so to do.

Barring of Action for Roentgen-Ray Burn

(Ogg vs. Robb (Ia.), 162 N. W. R. 217)

The Supreme Court of Iowa affirms a judgment in favor of the defendant that the plaintiff's alleged cause of action was barred by the statute of limitations. The court says it was alleged that in 1901 the plaintiff, then under 17 years of age, broke his right wrist. In July of that year, the defendant called the plaintiff into his office, without the knowledge or consent of the plaintiff's parents, and experimented on him with a Roentgen-ray machine to secure pictures of his hand and wrist. That the defendant continued for ten days in said experiments, and used the Roentgen-ray machine on the plaintiff's hand and wrist many times and made long and close exposures. That as a result the skin on the hand and wrist became discolored. That the defendant then informed the plaintiff and his parents that the use of the Roentgen-ray machine caused such discoloration, and then falsely and fraudulently informed them that this discoloration was of no particular consequence and would be temporary in its effects, fraudulently concealing from them the true effect of radio-exposure produced by the Roentgen-ray machine. That the defendant then treated the discoloration for a time and it apparently disappeared, leaving a scar, but with the usual use of the hand. That the plaintiff and his parents fully relied on the statement and advice of the defendant as to the temporary effect of the Roentgen rays, and nothing further was done in regard thereto until 1912. That the use of said machine by the defendant produced a cancerous condition which was latent until 1912, and the plaintiff had no knowledge of said condition until then. That then the tissues of the right hand where the Roentgen rays had been applied broke down and became an epithelioma or malignant cancerous growth, which caused great pain and necessitated the amputation of the right forearm. Was the plaintiff's cause of action concealed by the statement of the defendant that the original burning was but temporary and was of no particular consequence, and that the defendant fraudulently concealed the true effect produced by the use of the Roentgen-ray machine? The plaintiff alleged that he was burned in 1901 and, as he alleged, by the negligence of the defendant. This fact was known to the plaintiff and his parents. All damages which subsequently developed were traceable to and based on that act. By the original act the plaintiff was injured, and, as the petition alleged, by the negligence of the defendant. He would have been entitled to some damages at that time; and, if it be true that cancer necessarily and in all cases is the result of such burning, or if cancer is the probable result, such fact could be shown as bearing on the question of damages in an action for the original injury. If cancer is not the necessary or probable result of such burning, then the defendant's statement would be more or less of an opinion, and in that case the fact that later and in 1912 a cancerous condition did develop and the plaintiff's damages might thereby be increased, would not constitute a new cause of action. It would seem then that the plaintiff's cause of action accrued at the time of the original injury.

Giving Egg and Toast to Typhoid Fever Patient

(Ennis vs. Banks et al. (Wash.), 164 Pac. R. 58)

The Supreme Court of Washington reverses a judgment for $9,000 damages that was rendered in favor of the plaintiff on the second trial of this case, after this court had reversed a judgment for $1,500 rendered on the first trial. The court says that defendant Banks was called on the 22d to see the plaintiff's son, whom he found suffering with typhoid fever, and who was the next day removed to a hospital conducted by said defendant. From that time until the 14th of the following month the patient was a very sick man. Gas would accumulate, almost constantly, in his stomach and bowels, and, on the 11th, the defendant called into consultation two other physicians. It was then concluded that an operation was necessary, in order to remove the gas, but the plaintiff would not consent to it. The patient had before this been fed on a milk diet, which apparently did not agree with him, and was subsequently fed on beef broth. The latter diet seemed to agree with him better than the milk diet. On the 12th and 13th, the patient seemed to be somewhat improved. On the 14th, the defendant caused to be prepared a slice of bread, about three inches square, from which the crust was removed, and which was toasted and soaked in boiling milk until soft, and on it was placed an egg that had been broken into hot water and allowed to coagulate. The patient ate about two-thirds of the egg and toast. About three hours afterward, an eggnog was given to the patient, who then vomited the eggnog, the egg and toast. The patient at that time seemed to be worse. The plaintiff then had the patient removed to her home, about a block away, and called a homeopathic physician, who treated the patient two days, when he died. Afterward, this action was brought, based on alleged malpractice in feeding the patient the poached egg and toast.

The evidence showed that the patient's death might have been due to one of three causes: first, the disease itself; second, the carrying of the patient from the hospital to another place, and third, the change of diet. Under the rule established when the case was before this court previously, the court is constrained to hold that it was for the jury to determine which of these causes resulted in his death, and whether the defendant, in administering the toast and egg, was guilty of malpractice. But instructions on general negligence, which, in effect, told the jury that, for want of ordinary care generally, the defendant was liable, should not have been given, as the jury were thereby led to believe that they might consider any acts of negligence, or general acts, and make up their verdict outside the issues of the case.

An instruction to the effect that, in determining ordinary skill and diligence, the advanced state of the profession at

the time might be considered, was misleading, since there was no evidence in the case that there was any advanced state of the profession at that time. Again, each school of medicine is entitled to practice in its own way, and because one does not use the methods of the other is no reason for holding the one for malpractice. The issue in this case was a simple one. It ought to have been covered in, at most, a half dozen instructions, to the points that unless the jury could say that the patient died solely from the effect of the soft toast and egg which was administered to him, and not from the disease, or from being carried from the hospital, at the stage of the disease he was then in, there could be no recovery of damages; that there could be a recovery only in case the giving of the toast and egg was the prime cause of the patient's death, and the defendant knew, or should have known, such result would follow. Before the plaintiff would be entitled to recover for malpractice, the jury ought to have been told that they must find the defendant did not use his judgment in administering the egg and toast, under the circumstances, but was guilty of malpractice in administering such toast and egg at that time.

Society Proceedings

COMING MEETINGS

Amer. Acad. of Ophthal. and Oto-Laryng., Pittsburgh, Oct. 29-30.
Am. Assn. for Study and Prev. of Inf. Mort., Richmond, Va., Oct. 15-17.
American Association of Railway Surgeons, Chicago, Oct. 17-19.
Delaware State Medical Society, Middletown, Oct. 8-9.
Kentucky State Medical Association, Louisville, Oct. 16-18.
Medical Association of the Southwest, Kansas City, Oct. 15-17.
Minnesota State Medical Association, St. Paul, Oct. 10-12.
Mississippi Valley Medical Association, Toledo, O., Oct. 9-11.
Nevada State Medical Association, Reno, Oct. 18-19.
New Mexico Medical Society, Las Cruces, Oct. 4-6.
Southern Medical Association, Memphis, November 12-15.
Vermont State Medical Society, Barre, Oct. 11-12.
Virginia State Medical Society, Roanoke, Oct. 23-26.
West Virginia State Medical Association, Fairmont, Oct. 2-4.
Wisconsin State Medical Society, Milwaukee, Oct. 3-5.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Obstetrics and Diseases of Women and Children, York, Pa.

September, LXXVI, No. 3

1 Development of Prenatal Care in Borough of Manhattan, New York.—R. W. Lobenstine, New York.—p. 381.
2 Maternal Mortality from Childbirth in United States and Its Relation to Prenatal Care. G. L. Meigs, Washington, D. C. —p. 392.
3 Prenatal Care; Opportunity for Medical Profession. A. B. Emmons, Boston.—401.
4 Some Economic Hints from France. T. C. Merrill, Washington, D. C.—p. 405.
5 Obstructive Jaundice. C. G. Heyd, New York.—p. 409.
6 Rupture of Uterus; Report of Cases. W. A. Scott, Toronto.—p. 423.
7 An Operation for Procidentia in Nulliparous Woman. W. M. Ford, New York.—p. 438.
8 Case of Antepartum Mammary Hyperemia Due to Unrecognized Malignant Disease. G. W. Kosmak, New York.—p. 444.
9 Case of Papillocystoma of Ovaries. A. Peskind, Cleveland.—p. 448.
10 Results of Interposition Operation. D. R. Ayres, New York. —p. 451.
11 Postoperative Treatment of Vesicovaginal Fistulae. C. G. Child, Jr., New York.—p. 455.
12 Gas Bacillus Infection; Case of Acute Endometritis and Septicemia Following Parturition. S. Graves, Louisville, Ky.—p. 458.
13 Cervicoplastic Treatment of Sterility. A. Sturmdorff, New York. —p. 469.
14 Retained Placenta. E. P. Barnard, Philadelphia.—p. 477.
15 Retained Adherent Placenta. C. B. Reynolds, Philadelphia.—p. 479.
16 Surgeon's Responsibility to Economics of Hospital. E. Marvel, Atlantic City, N. J.—p. 482.

American Journal of Orthopedic Surgery, Boston

September, XV, No. 9

17 *To What Extent Have Sun's Rays an Influence in Treatment of Bone and Joint Tuberculosis? A. H. Freiberg, Cincinnati.—p. 625.
18 *Association of Arterial Hypertension and Chronic Arthritis. P. P. Swett, Hartford, Conn.—p. 635.
19 Suspension with Extension in Treatment of Fractures of Limbs. J. Blake, France.—p. 644.
20 *Apophysitis of Os Calcis. A. D. Kurtz, Philadelphia.—p. 659.
21 Osteochondritis Deformans Juvenilis; Report of Case. A. B. Galvin, Springfield.—p. 664.

17. **Sun Rays Treatment of Bone Tuberculosis.**—From an experience with three cases Freiberg concludes that exposure to the sun's rays resulted in speedy improvement, which can fairly be attributed to this agency. The retrogression which ensued on having to abandon the systematic use of the sunlight seems to emphasize this fact, and makes it desirable to continue this during the winter in his own environment. The results obtained by Freiberg seem to indicate the value of this method, even in the vicinity of large cities and at low altitudes, where, according to Rollier, the potency of the ultraviolet rays is greatly diminished by the stratum of moist and unclean air through which they must pass. It is by no means certain that the ultraviolet rays are the essentially active or the only active part of sunlight, in a therapeutic sense. In Freiberg's experience the use of the quartz ultraviolet lamp, the so-called Alpine sun lamp, has failed to show that it may be considered even a fair substitute for sunlight. Its light, on the other hand, is quite rich in ultraviolet rays. It seems worth while to strive to construct a form of shelter for patients which will protect them from unendurable cold and especially humid winds, thus making possible the continuance of treatment during bright days of the whole winter season. It seems necessary to expose the whole body surface in order to obtain the best results. Such shelters should, therefore, have as covers some material permitting the easy passage of the ultraviolet rays. An investigation in this direction is under way, but has not yet yielded any result of value.

18. **Arterial Hypertension and Chronic Arthritis.**—Seventy cases of these combined lesions have been studied sufficiently by Swett to warrant the assertion of a definite diagnosis. The average blood pressure readings of the seventy cases was 182. In thirty-seven, or 52.6 per cent., Heberden's nodes were present. The author is convinced that arterial hypertension and chronic hypertrophic arthritis occur simultaneously in a large number of instances. The effect of treatment directed against the hypertension by means of general régime, or by specific medication, is to improve or arrest the progress of both conditions in the vast majority of the cases.

20. **Apophysitis of Os Calcis.**—Three cases are cited by Kurtz. The condition is one that is caused by an overstrain of the epiphyseal junction some time before complete ossification occurs. The prognosis is good for ultimate recovery, provided the proper treatment is carried out. The indications are rest, until pain has subsided, and then some means should be used to relieve the strain from the heel while it is functioning. This may be met by the use of the rubber pad in the heel of the shoe.

Annals of Surgery, Philadelphia

September, LXVI, No. 3

22 Conservatism in Surgery. S. J. Mixter, Boston.—p. 257.
23 *Carrel Method of Treating Wounds. C. L. Gibson, New York. —p. 262.
24 Shock, with Particular Reference to Condition as Seen in War Surgery. E. W. Archibald, Montreal, and W. S. McLean.—p. 280.
25 Injection of Gasserian Ganglion for Neuralgia of Fifth Cranial Nerve; Report of Cases. G. T. Vaughan, Washington.—p. 287.
26 *Empyema of Thorax. H. Lilienthal, New York.—p. 290.
27 Dilatation of Heart with Acute Myocarditis Following Abdominal Operations; Report of Cases. E. A. Vander Veer, Albany, N. Y.—p. 295.
28 Epigastric Hernia without Palpable Swelling. A. V. Moschcowitz, New York.—p. 300.
29 Paraffin Hernia; Report of Cases. A. F. Jonas, Omaha.—p. 308.
30 Case of Hypernephroma in Folds of Falciform Ligament of Liver. F. N. G. Starr, Toronto.—p. 318.
31 *Indications for Cholecystectomy. M. F. Porter, Fort Wayne, Ind. —p. 321.

32 Acute Suppurative Cellulitis of Stomach; Report of Three Cases. E. Rixford, San Francisco.—p. 325.
33 A Suture Method of Gastro-Enterostomy. F. T. Stewart, Philadelphia.—p. 334.
34 Simple Method of Resecting Transverse Colon. J. E. Summers, Omaha.—p. 337.
35 *Cases of Carcinoma of Splenic Flexure of Colon. J. A. Hartwell, New York.—p. 339.
36 *Infections in Prostate Cases. E. S. Judd, Rochester, Minn.—p. 362.
37 Selection of Cases for Prostatectomy. J. B. Deaver, Philadelphia.
38 Artificial Impaction of Hip; Report of Cases. F. J. Cotton, Boston.—p. 380.

23. **Carrel Method of Treating Wounds.**—Gibson is of the opinion that, while the Carrel method of treating wounds has not worked any miracles, he has been able to control suppuration more promptly than by any other method, and certainly the results of the bacterial examinations as recorded in his charts show in practically all instances an immediate and constant diminution of the bacteria.

26. **Empyema of Thorax.**—The 100 patients whose cases Lilienthal tabulates represent thirty-eight minor thoracotomies with 18.4 per cent. mortality; forty-four major thoracotomies, many of them preceded by minor thoracotomy, death rate 27.2 per cent. Resection of ribs with their periosteum and gauze packing in encapsulated empyema treated as if it were an abscess, seven cases with no deaths. Resection and drainage by the old method seven cases with one death, or 15.6 per cent. In all cases there has not been a single thoracoplastic collapse operation. There have been a number of revisions, secondary and even tertiary, but eventually all the patients went home with symmetrical chests and fully expanded lungs.

31. **Indications for Cholecystectomy.**—Porter says it is neither necessary nor advisable to remove the gallbladder except when it is diseased or injured beyond the probability or possibility of restitution, and that this power of restitution may be presumed to be lost only when one or the other of the following conditions obtains: Hydrops with obliteration of the cystic duct; calcareous degeneration or fibrous degeneration with contraction; chronic empyema; the cholesterin or strawberry gallbladder; carcinoma; extensive laceration or perforation; gangrene other than localized gangrene, such as is sometimes caused by pressure of a stone.

35. **Carcinoma of Splenic Flexure of Colon.**—The splenic flexure is the third most common site for the growth of colonic cancer. This growth tends to the production of obstruction with indeterminate premonitory symptoms. This complication occurs acutely in nearly three fourths of the cases coming to operation. A recognition of the foregoing facts, and a more careful detailed study, with a possible exploratory operation, should lead to an early diagnosis in a majority of the cases, and thus forestall acute complications. The probable operative mortality of all cases up to the present time is over 60 per cent., and the per centage of prolonged cures is exceedingly low, 10 to 25 per cent. These appalling results are largey due to the delayed diagnosis, and an improper mode of attack. The latter should follow the principle of the two or more stage operation with provision for external colonic drainage, either as a preliminary, or at the time of resection; always the former in the presence of serious obstruction or abscess formation. The distal portion of the transverse colon, the flexure and the entire descending colon must be resected in order to obtain the requisite conditions for a secure anastomosis with an ultimate patency of the colonic lumen.

36. **Infections in Prostate Cases.**—In prostatic cases, a definite reaction occurs during the preoperative treatment. In some cases this reaction may be due to infection in the kidney. Several days after the beginning of treatment or after the operation has been performed, in a very large majority of cases, the urine shows a considerable number of colon bacilli. Judd does not believe that this can be due to contamination in every instance, although he is unable to say whether it comes from the kidney, the bladder, or the prostate itself. He suggests that the infection may be walled off in the kidney and therefore no organisms will show in the urine. Simultaneously with any form of treatment, the infection becomes active and the urine immediately shows bacteria. Colon bacillus vaccine may modify the infection, though it does not decrease the number of colon bacilli in the urine.

Archives of Ophthalmology, New Rochelle, N. Y.

September, XLVI, No. 5

39 Binocular Metamorphopsia Produced by Optical Means. J. A. Lippincott, Monte Carlo.—p. 397.
40 Case of Primary Sarcoma of Iris. G. H. Bell, New York.—p. 427.
41 Trypanosome Keratitis; Experimental Study. A. C. Woods and G. E. de Schweinitz, Philadelphia.—p. 431.
42 Tonsil as Source of Infection in Iritis and Focal Choroiditis; Case Reports. J. Dunn, Richmond, Va.—p. 446.
43 Glaucoma as Result of Herpes Zoster Frontalis; Report of Cases. J. E. Weeks, New York.—p. 460.
44 Treatment of Detachment of Retina; Müller's Resection of Sclera. E. Török, New York.—p. 466.

Boston Medical and Surgical Journal

September 6, CLXXVII, No. 10

45 Newer Methods of Diagnostic Technic. F. T. Lord, Boston.—p. 299.
46 Review of Literature of Last Nine Years on Nephritis of Infancy and Childhood. L. W. Hill, Boston.—p. 313.
47 Diagnosis of Focal Sepsis. J. M. Anders, Philadelphia.—p. 319.
48 *Bruck's Serochemical Test for Syphilis; Report of Four Hundred Cases Compared with Wassermann Reaction. C. E. Smith and H. C. Solomon, Boston.—p. 321.
49 *Paresis or Dementia Praecox? H. I. Gosline, Trenton, N. J.—p. 324.
50 Shock at the Front. W. T. Porter, Boston.—p. 326.

48. **Bruck's Serochemical Test for Syphilis.**—The results of the Bruck serochemical test in 405 cases are presented by Smith and Solomon. In 101 of these cases there were definite clinical manifestations of syphilis, in which the Wassermann and Bruck tests agreed positively in seventy-four, or 75 per cent. The two tests agreed negatively in twelve instances, and were at variance in 15. In the group which showed syphilis of the nervous system there were sixty-four cases of clinically certain general paresis, of which the Wassermann and Bruck tests agreed in fifty-four instances, or practically 85 per cent. In other forms of central nervous system involvement the agreement was 100 per cent. in the fifteen cases tested. In the cases with no apparent involvement of the nervous system the agreement was somewhat less, being 76 per cent. This may be in keeping with the fact that the Wassermann test was not so strongly positive in these cases. The advantages of the test are: (1) the short time required to perform the test; (2) the limited amount of apparatus necessary, and (3) the simplicity of the technic. The disadvantages of the test seem, for the most part, to be bound up in the personal variations that are apt to occur.

49. **Paresis or Dementia Praecox?**—It seems proper to Gosline to call those cases paresis which show the mental picture and the physical signs of paresis, whether they have the positive signs of syphilitic infection or not, and to call those cases dementia praecox which have the mental and objective signs of dementia praecox, regardless of whether they have a syphilitic infection or not. Only in this way, says the author, can the problem be solved as to why certain paretics recover with more dementia than others, why some are less amenable to treatment than others, and, finally, why some have negative findings for syphilis.

Journal of Experimental Medicine, Baltimore

September, XXVI, No. 3

51 *Human Pulmonary Distomiasis Caused by Paragonimus Westermanni. K. Nakagawa.—p. 297.
52 *Distribution in Human Body of Spirochaeta Icterohemorrhagiae. R. Kaneko and K. Okuda, Japan.—p. 325.
53 *Rat as Carrier of Spirochaeta Icterohemorrhagiae, Causative Agent of Weil's Disease (Spirochaetosis Icterohemorrhagica). Y. Ido, R. Hoki, H. Ito and H. Wani, Japan.—p. 341.
54 Clinical Aspects of Spirochaetosis Icterohemorrhagica or Weil's Disease. R. Inada, Japan.—p. 355.
55 Etiology and Pathology of Rat Bite Fever. R. Kaneko and K. Okuda, Japan.—p. 363.
56 Circulating Immunity Principles in Rat Bite Fever. Y. Ido, H. Ito, H. Wani and K. Okuda, Japan.—p. 377.
57 *Pulmonary Embolism; Experimental Study. F. C. Mann, Rochester, Minn.—p. 387.
58 Viscous Metamorphosis of Blood Platelets. J. H. Wright and G. R. Minot, Boston.—p. 395.

59 *Studies on Bacterial Anaphylaxis and Infection. H. Zinsser and J. T. Parker, New York.—p. 411.
60 Increased Virulence of Hog Cholera Bacillus Produced by Passage Through Rabbits. C. Ten Broeck, Princeton, N. J. —p. 437.
61 Significance of Agglutinins in Immunity of Rabbit to Hog Cholera Bacillus. C. Ten Broeck, Princeton, N. J.—p. 441.

51. **Pulmonary Distomiasis.**—Nakagawa says that the chief causes of pulmonary distomiasis are the eating of raw or insufficiently cooked crabs infected with the cercariae of *Paragonimus westermanni*, and the drinking of river water containing them.

52. **Spirochaeta Icterohemorrhagiae in Body.**—The material examined by Kaneko and Okuda came from necropsies performed on forty-three patients who died at various stages of illness. The distribution of the spirochetes in the various organs of the human body differs according to the degree of development of the immune bodies. The spirochetes disappear first from the liver and suprarenals, but remain for some time in the muscle, prostate, thymus, appendix, testicles, epididymis, etc. In the kidneys they can be found for a long time. Their mode of disappearance would seem to indicate distribution varying with the different stages of the disease. And not alone the general distribution, but the local position of the spirochetes changes with the different stages. In the early stage, they are located mainly extracellularly, in the interstices; in the later stage, owing to the development of the immune bodies, in the blood, in the main intracellularly, and within the kidney tubules.

53. **Carrier of Spirochaeta Icterohemorrhagiae.**—In thirty-four out of ninety-two cases, or 37 per cent., examined by the authors, spirochetes identical with *Spirochaeta icterohemorrhagiae* were present in the kidneys or in the urine, as demonstrated directly by dark-field illumination and indirectly by inoculation. The organisms cannot be demonstrated in the blood and the liver, but in the urine of rats harboring *Spirochaeta icterohemorrhagiae* in the kidneys, they are present without exception. Urine containing spirochetes, even in small amounts (0.1 to 0.2 c.c.), infects guinea-pigs when injected intraperitoneally. In Japan, the rat is undoubtedly a carrier of the causative agent of *Spirochaetosis icterohemorrhagica*. *Mus decumanus* was found to be a carrier in 40.2 per cent. of 149 cases. *Mus alexandrinus* in 0.8 per cent. of twenty-four cases. On the basis of these findings, the authors conclude that the extermination of rats and field mice is a highly important prophylactic measure against Weil's disease.

57. **Pulmonary Embolism.**—The mechanism by which death is produced by an embolus which blocks only a small part of the pulmonary blood circulation is unknown. Mann's investigation was made for the purpose of determining this unknown factor, a purpose he has not been able to accomplish, as it has been possible to produce death experimentally only by a more or less complete blocking of the pulmonary circulation. Emboli made of paraffin and the animal's own blood were sent into the venous circulation of dogs. Death did not occur until the pulmonary circulation was practically occluded. The results were the same whether the blood pressure of the animal was normal or depressed by ether or disease and whether the procedure was carried out under ether or local anesthesia.

59. **Bacterial Anaphylaxis and Infection.**—An analysis of bacterial anaphylaxis and its relation to the occurrences in the animal body during an infectious disease is being made by Zinsser and Parker. They show that the sensitization of the tissues of guinea-pigs, as indicated by the isolated uterus, required three to five days when passive sensitization was employed, and that in these relations conditions with bacterial sensitization were entirely analogous to those revealed for serum anaphylaxis by Dale and Weil especially. It has become apparent that the sensitized uterus reacted not at all with whole bacteria or whole red cells, or, in other words, that before reaction with sensitized organs could occur an extraction or solution of the bacterial cell must take place. The mechanism of injury in the sensitized animal or in the human being so far along in typhoid that antibodies have begun to develop is in part one in which antigen, derived from the bacilli and brought into solution, or rather suspension, in the blood stream, reacts with antibodies which are from the beginning, or have subsequently become, integral parts of the cell protoplasm, the entire process taking place within the cell. The symptoms which appear as the incubation time ends are largely those due to cellular sensitization which probaby begins before any considerable amount of circulatory antibodies is present. Cure would consist of a gradual checking of growth and final destruction of the bacteria, and the consequent cessation of antigen liberation, but delicate hypersusceptibility would probably persist for some time after cure and immunity have been established. Just what the relation between tissue hypersusceptibility and immunity is remains a problem for further study.

Journal of Urology, Baltimore

August, I, No. 4

62 *Severe Renal Insufficiency Associated with Attacks of Urticaria in Hypersensitive Individuals. W. T. Longcope and F. M. Rackemann, New York.—p. 351.
63 *Lymphoid and Cystic Bodies in Urethra as Evidence of Tuberculosis. P. S. Pelouze, Philadelphia.—p. 367.
64 *Median Prostatic Bars as Found at Necropsy. A. Randall, Philadelphia.—p. 383.
65 Primary Nonpapillary Carcinoma of Renal Pelvis; Report of Case and Review of Literature. H. L. Kretschmer, Chicago. —p. 405.
66 Diverticulum of Bladder; Case Reports. J. A. Gardner, Buffalo. —p. 439.

62. **Renal Insufficiency with Urticaria.**—A study of the renal function in six cases of urticaria, four of which were hypersensitive to one or more foreign proteins, showed more or less profound disturbances of the functional activity of the kidney in three instances. In one case the disturbance was limited to a marked albuminuria and cylindruria. In two cases the attacks of urticaria and erythema were accompanied by albuminuria, cylindruria, increase in blood urea, profound depression of the index of urea excretion, decrease in the output of phenolsulphonephthalein and retention of chlorids and water. These observations show that during severe attacks of urticaria and erythema multiforme in the spontaneously sensitive, a much more profound intoxication of the body tissues takes place than can be demonstrated in the usual case of serum disease. Longcope and Rackemann suggest that it is probable that the intoxication causes a general distrubance in protein metabolism as well as an injury to the kidney.

63. **Lymphoid and Cystic Bodies in Urethra.**—In approximately 3,500 cystoscopies within the last three and one-half years, Pelouze has seen fifty-one cases. Of this number, he has studied forty-two cases, of which thirty-seven show reasonably certain evidences of tuberculosis. Five are still being studied for further confirmation of a coexisting tuberculous focus. Nine of these cases were observed only once, and did not return for further study. The most striking points in the entire group of cases are the following: Many were, or had been, in direct daily contact with cases of tuberculosis. Thirty-two had had a more or less recent specific urethritis. Almost all of this latter number were being treated for "chronic urethritis." The urine was usually clear but contained shreds. An associated follicular prostatitis was the rule. Frequency of urination was present in twenty-one cases. Burning pain in the fossa navicularis was present in thirty-five cases, usually only at urination. It was the most common symptom calling attention to the lesions. Burning pain at the vesical neck or in the perineum, either constant or intermittent, was present in nineteen cases.

64. **Median Bars as Found at Necropsy.**—Three hundred necropsy specimens of adult male prostates were examined by Randall. They have shown median obstruction to the vesical outlet in 18 per cent. of fifty-four cases. These have been shown to be either (1) fibrous, 10 per cent., or (3) glandular, 8 per cent. The fibrous type of bar has been subdivided into two varieties according to whether the process has encroached on, or drawn up (1) the urethral, or (2) the vesical surface in its development. They are the result of an inflammatory reaction and but a part of a generalized chronic interstitial prostatitis. The glandular type has been

subdivided into two varieties according to whether the hypertrophic process is confined to (3) the posterior prostatic commissure, inside the prostatic capsule and under the sphincter muscle, in which case a thick, broad bar is formed, or the (4) subcervical glands of Albarran, occurring just under the mucous membrane and within the sphincteric ring. Evidences of chronic inflammatory reaction has been the rule likewise in these glandular hypertrophies.

Medical Record, New York

September 8, XCII, No. 10

67 Incompetency of Ileocecal Valve vs. Lane's Kink as Cause of Ileac Stasis. J. H. Kellogg, Battle Creek, Mich.—p. 399.
68 Diagnosis and Therapy of Chronic Intestinal Toxemia. G. R. Satterlee, New York.—p. 402.
69 Diagnosis of Pulmonary Tuberculosis in Children of School Age. M. Fishberg, New York.—p. 406.
70 Milk Bacteria which Proliferate Before and Those which Survive Pasteurization: A New Method of Milk Sterilization. J. M. W. Kitchen, East Orange, N. J.—p. 409.
71 Autoserum Treatment for Chorea. R. D. Moffett, New York.—p. 414.
72 Some Disfiguring Affections of Eyelids. D. W. Montgomery, San Francisco.—p. 416.
73 Outlines of New York Concerning Alcoholic Problem. T. D. Crothers, Hartford, Conn.—p. 418.

Michigan State Medical Society Journal, Grand Rapids

July, XVI, No. 7

74 Abdominal Injuries—Symptoms, Treatment; Report of Case. L. J. Dretzka, Detroit.—p. 301.
75 Correct Interpretation of Bladder Symptoms in Female. W. T. Dodge, Big Rapids.—p. 302.
76 Contributions to Medical Literature by Profession of Detroit During Last Sixteen Years—(1900-1915 both Inclusive). W. H. Morley, Detroit.—p. 304.
77 Disturbances of Menopause and Their Relation to Blood Pressure. G. M. Johnson, Traverse City.—p. 308.
78 Relation of Physician to Compensation Act. C. S. Gorsline, Battle Creek.—p. 310.
79 Early Diagnosis of Pulmonary Tuberculosis. H. S. Hatch, Lansing.—p. 312.
80 *Case of Full Term Ectopic Gestation Retained Eighteen Years. Operation and Recovery. R. Peterson, Ann Arbor.—p. 316.
81 Case of Visceral Syphilis. U. J. Wile, Ann Arbor.—p. 317.
82 Spindle Cell Sarcoma Arising in Cavernous Lymph and Hemangioma of Musculospiral Nerve. M. M. Peet, Ann Arbor.—p. 320.
83 Case of Amelanotic Melanotic Sarcoma over Scapula Region. H. M. Malejan and V. Russell, Ann Arbor.—p. 321.

September, XVI, No. 9

84 Penetrating and Nonpenetrating Injuries of Eye; Report of Cases. S. R. Edwards, Grand Rapids.—p. 391.
85 Two Cases of Cervical Ribs Associated with Symptoms of Hyperthyroidism. H. B. Schmidt, Detroit.—p. 394.
86 Shell Shock; General Discussion. W. H. Marshall, Boyne Falls.—p. 396.
87 Head Injuries; General Discussion. F. W. Walker, Detroit.—p. 399.
88 Medieval Care of Insane in Modern Times. "County Care System." H. S. Hulbert, Ann Arbor.—p. 401.
89 Two Cases in which Symptoms Seemed to Be Dependent on Disease of Teeth. N. B. Foster, Ann Arbor.—p. 406.
90 Report of Two Cases of Retroperitoneal Hematoma Following Purse String Watkins Operation for Cystocele R. A. Bartholomew, Ann Arbor.—p. 410.
91 *Late Results in Splenectomy. Q. O. Gilbert Ann Arbor.—p. 412.
92 Malaria; Report of Case. H. S. Bartholomew, Lansing.—p. 413.

80. **Full Term Ectopic Gestation Retained Eighteen Years.**—A woman, aged 46, consulted Peterson for an abdominal tumor which has existed for eighteen years. Five years after marriage there was cessation of menstruation, the usual morning sickness and enlargement of the breasts. There was a gradual increase in the size of the abdomen until at the ninth month she was as large as a woman at term. She felt life at the fifth month but does not remember at what time movement ceased. She thought she was pregnant but never had any labor pains. Shortly after the cessation of menstruation for nine months, she began to flow regularly again. She remained the same size, that is, the size of a woman at term, for two years, then gradually became smaller. For the past six years her abdomen has been of about the same size. During the past year she has not been feeling well and has lost 10 or 15 pounds. The tumor rose rather abruptly from the pubes, the highest point being half way between this point and the umbilicus. The growth was symmetrical, smooth, somewhat tender and distinctly fluctuating. It was fixed and apparently quite densely adherent to the parietal peritoneum. Posterior to the cervix could be felt an irregular, tender mass about the size of a small hen's egg apparently attached to the tumor which could be made out as a cystic mass by palpation through the culdesac. It was impossible to palpate the appendages. On cutting through the abdominal wall, the fluctuating sac was found densely adherent to the parietal peritoneum, omentum and portions of the intestine. During the enucleation of the sac the latter was nicked in one portion, giving exit to an oily fluid of about the consistency and color of pea soup. When the sac was cut open it was found to contain the greater portion of a fetal skeleton.

91. **Results in Splenectomy.**—Gilbert records the blood cell changes, one year after splenectomy in two patients. He found a tremendous bone marrow stimulation immediately after operation, as evidenced by the marked leukocytosis, the increased nuclear red forms and increase in the large mononuclear and transitional groups. One year later he found the differential count very much the same, except for the increase in the lymphocytes and the marked increase in the number of nucleated red cells. The actual number of nuclear particles has remained about the same. One would think, then, that there must be a more essential factor in the blood cell destruction than the spleen. It would seem that the spleen has a very definite relation to bone marrow cell production, and it has a most definite relation to the maturing of the red cells, especially in the destructive metabolism of the nucleus of the red cells. In these two patients who have returned after a definite remission there is now much greater evidence of hemolysis than before. The spleens were removed and both show marked evidence of bone marrow activity with the principal change in the large number of normoblasts with all stages in the formation of nuclear particles.

Modern Hospital, St. Louis

September, IX, No. 3

93 Herman Knapp Memorial Eye Hospital, New York City. A. Knapp, New York.—p. 153.
94 Clinical Laboratory of Albany Hospital. C. F. Graham, Albany, N. Y.—p. 158.
95 Government's Work in Eradication of Trachoma. J. McMullen, Lexington, Ky.—p. 163.
96 Emergency Hospital for After-Care of Infantile Paralysis. L. C. Ager, Brooklyn.—p. 166.
97 *White Operation Room. W. L. Secor, Kerrville, Texas.—p. 170.
98 New York Children's Eye Clinics. W. M. D'A. Carhart, New York.—p. 171.
99 Medicine and Metrics. H. V. Arny, New York.—p. 174.
100 James J. Gray Clinic in Atlanta, Ga. C. C. Hinton and H. F. Hentz, Atlanta, Ga.—p. 177.
101 Standardization of Hospitals; Class II and III, Semipublic Institutions. J. A. Hornsby, Chicago and others.—p. 180.

97. **White Operating Room.**—The illumination of a room depends on two factors, the amount of light admitted to the room and the amount of light reflected from the surfaces it strikes within the room. After a study of the coefficient of reflection of various colors, H. A. Gardner published his results in the *Journal of the Franklin Institute* for January, 1916, and showed that the coefficient of reflection of white is 88 per cent., of light green 42 per cent., medium green 14 per cent. and dark green 11 per cent. Acting on this principle Secor built an octagon operating room, the ceiling of which was carried to a point, giving the effect of eight triangular panels; four of the sides from tip of pointed ceiling to floor are of heavy ground glass, which admits an abundance of north light. The walls, furniture, etc., are all white; to obviate the effect of the glare they use beaks on their caps, and on bright days large amber-tinted spectacles are worn. The cap used is a modified Mayo cap with small beak, and, to make it cooler, the back part of the skirt is cut away. The beak is made of several thicknesses of muslin with a number of rows of machine stitching and does not in the least hinder sterilization.

Nebraska State Medical Journal, Norfolk

August, II, No. 8

102 Society's Duty to Mentally Deficient Children. D. G. Griffiths, Beatrice.—p. 381.
103 Epilepsies. B. F. Williams, Lincoln.—p. 385.
104 Manifestations of Late Hereditary Syphilis. H. B. Hamilton, Omaha.—p. 388.

105 School Hygiene. J. W. Straight, Hastings.—p. 392.
106 Advantages and Disadvantages of Country Physician. G. W. Sullivan, St. Edward.—p. 396.
107 Functional Kidney Diagnosis in Urologic Diseases. G. W. Covey, Lincoln.—p. 397.

New York Medical Journal

September 8, CVI, No. 10

108 Treatment of Paresis. B. D. Evans and F. H. Thorne, Morris Plains, N. J.—p. 437.
109 Imperfect Sight of Normal Eye. W. H. Bates, New York.—p. 440.
110 Psychotherapy and Drama. S. E. Jelliffe, New York.—p. 442.
111 Drugless Healing Cults. J. M. Taylor, Philadelphia.—p. 447.
112 Prostatic Hypertrophy with Tabes. E. M. Watson, Buffalo.—p. 448.
113 Plea for Early Diagnosis of Pulmonary Tuberculosis. S. A. Silk, Washington, D. C.—p. 449.
114 Diagnosis of Early and Late Gastric Cancer. H. Weinstein, New York.—p. 453.
115 New Group of Symptoms in Terminal Gastric Catarrh. R. Upham, Brooklyn.—p. 455.

Oklahoma State Medical Association Journal, Muskogee

September, X, No. 9

116 Surgery of Cystocele, Rectocele and Procidentia Uteri. A. L. Blesh, Oklahoma City.—p. 353.
117 Use and Abuse of Serums and Vaccines. C. W. Fisk, Kingfisher.—p. 358.
118 Focal Infections and Their Distal Consequences. E. Lamb, Clinton.—p. 362.
119 Sick Headache. C. W. Heitzman, Muskogee.—p. 367.
120 Hemorrhage from Ruptured Ovarian Cyst Simulating Ectopic Pregnancy; Report of Case. C. S. Neer, Vinita.—p. 369.
121 Acidosis of Pregnancy. W. M. Sanger, Oklahoma City.—p. 371.
122 Adynamic Ileus; Report of Two Cases. I. W. Robertson, Henryetta.—p. 373.

Pennsylvania Medical Journal, Athens

August, XX, No. 11

123 Bilateral Metastatic Panophthalmitis Following Pneumonia, with Fatal Issue. G. A. Lawrence, Philadelphia.—p. 379.
124 Ligation of Superior Pole of Thymus in Operating for Goiter. L. F. Stewart, Clearfield.—p. 751.
125 Some of More Unusual Affections Involving Deep Urethra and Bladder. E. R. Kirby, Philadelphia.—p. 755.
126 Abnormal Coagulation Time of Blood and Methods of Overcoming It. G. M. Dorrance, Philadelphia.—p. 761.
127 Early Differential Diagnosis Between Dementia Praecox and Manic Depressive Insanity. F. X. Dercum, Philadelphia.—p. 765.
128 Shall County Society Organ Be Continued? A. B. Hirsh, Philadelphia.—p. 767.
129 Secretary as Factor in Society. L. B. Kline, Catawissa.—p. 770.
130 Focal Infection. J. Daland, Philadelphia.—p. 771.
131 Alcohol as Revealed by Modern Scientific Research (Ethyl Alcohol). S. C. Smith, Philadelphia.
132 Commitment of Insane in State of Pennsylvania. T. Diller, Pittsburgh.—p. 778.
133 Prognosis, Sequelae and Complications of Infantile Paralysis. A. J. M. Treacy, Philadelphia.—p. 782.

Southern Medical Journal, Birmingham, Ala.

September, X, No. 9

134 Modern Treatment of Acute Infectious Diarrhea. A. J. Waring, Savannah, Ga.—p. 711.
135 Evils of Drug Addiction and of Traffic. W. D. Partlow, Tuscaloosa.—p. 713.
136 *Case of Huge Dilatation of Esophagus. J. Friedenwald, A. Cotton and A. C. Harrison, Baltimore.—p. 717.
137 Public Health Administration and What Has Been Accomplished in Glynn County, Georgia. T. F. Abercrombie, Brunswick, Ga.—p. 722.
138 Intensive Community Sanitation in Virginia; Methods Adopted and Some Results. E. L. Flanagan, Richmond, Va.—p. 724.
139 Our Professional Allies, Public Health Nurses. C. C. Aven, Atlanta, Ga.—p. 730.
140 Gunshot Injuries of Spinal Cord; Report of Two Cases. C. W. Roberts, Atlanta, Ga.—p. 734.
141 *Cholecystitis with and without Gallstones, with Classification of Symptoms. G. A. Hendon, Louisville, Ky.—p. 737.
142 Streptococcus Septicemia with Metastatic Infection in One Eye. C. W. Vest, Baltimore.—p. 740.
143 Passage of Wounded Man from Front Line Trenches to Base. T. H. Goodwin, Washington, D. C.—p. 744.
144 Medical Preparedness in Great Drive for Democracy. J. C. Bloodgood, Baltimore.—p. 746.
145 What European War Has Taught Us in Transportation and Handling of Injured. J. H. Ford, Leon Springs, Texas.—p. 752.
146 Why Cyclopegic or Mydriatic as Routine? J. M. Crawford, Asheville, N. C.—p. 758.
147 Eye Strain and Its Relation to Reflex Nervous Troubles. L. M. Scott, Jellico, Tenn.—p. 760.

136. **Huge Dilatation of Esophagus.**—The esophageal dilatation in this case was fusiform in shape, the smaller portion of which extended as high up in the neck as the cricoid cartilage. The esophageal sac held as much as 1,750 c.c. of water. The stomach was about normal in size, with a capacity of 750 c.c. The other abdominal organs were normal.

141. **Cholecystitis.**—One of Hendon's patients was a male, 26 years of age. While at work he was suddenly seized with pain in the region of the gallbladder and went home and sent for his physician. Two days later he was admitted to a hospital. His pain was excruciating; pulse, 120; temperature, 101.6. A tumor was perceptible in the gallbladder region. Incision showed the gallbladder very black and distended; when opened it was found filled with blood clot. There were no stones present. He made a smooth convalescence and died one year later from nephritis.

Southwest Journal of Medicine and Surgery, El Reno, Okla.

July, XXV, No. 7

148 Focal Infections. A. B. Leeds, Chickasha.—p. 157.
149 Surgical Acidosis. W. E. Dicken, Oklahoma City.—p. 163.
150 Electrotherapy. J. Y. Simpson, Kansas City, Mo.—p. 173.
151 Heat in Cancer of Uterus. F. A. Hoge, Fort Smith, Ark.—p. 176.
152 Focal Infections. W. H. Livermore, Chickasha.—p. 179.

Southwestern Medicine, El Paso, Texas

August, I, No. 8

153 Administration of Base Hospital. C. R. Snyder.—p. 9.
154 Ambulance Company. W. H. Allen.—p. 13.
155 Clinical Features of Labyrinthitis. E. R. Carpenter, El Paso.—p. 19.
156 Pathology of Acute Acidosis. W. W. Watkins, Phoenix, Ariz.—p. 23.
157 Conservation of Kidney Tissue by Surgeon. W. Smith, Tucson, Ariz.—p. 32.

Surgery, Gynecology and Obstetrics, Chicago

September, XXV, No. 3

158 *Symposium on Relation of Glands of Internal Secretion to Gynecology and Obstetrics. R. T. Frank, New York.—p. 225.
159 *Relation of Pituitary Gland to Female Generative Organs. E. Goetsch, Baltimore.—p. 229.
160 *Physiologic and Pathologic Importance of Parathyroid Gland from Experimental Aspect. C. Voegtlin, Washington.—p. 244.
161 *Pineal Gland; Influence of Pineal Gland on Growth and Differentiation with Particular Reference to Its Influence on Prenatal Development. C. P. McCord, Detroit.—p. 250.
162 *Relation of Parathyroid System to Female Genital Apparatus. E. H. Pool, New York.—p. 260.
163 *Thyroid Gland in Relation to Gynecology and Obstetrics. D. Marine, Cleveland.—p. 272.
164 Thymus Gland and Its Possible Relation to Female Genital Tract. A. M. Pappenheimer, New York.—p. 276.
165 *Endocrine Function of Pancreas and Its Relation to Sex Life of Women. A. J. Carlson, Chicago.—p. 283.
166 *Experimental and Clinical Evidence as to Influence Exerted by Suprarenal Bodies on Genital System. S. Vincent, Winnipeg, Manitoba.—p. 294.
167 *Relation of Ovary to Uterus and Mammary Gland from Experimental Aspect. L. Loeb, St. Louis.—p. 300.
168 *Transplantation and Retention of Ovarian Tissue after Hysterectomy. W. P. Graves, Boston.—p. 315.
169 Preparation and Standardization of Ovarian and Placental Extracts. W. H. Morley, Detroit.—p. 324.
170 *Placenta Regarded as Gland of Internal Secretion. R. T. Frank, New York.—p. 329.
171 *Relation of Sex Glands to Metabolism. J. R. Murlin, and H. Bailey, New York.—p. 332.
172 Study of Ovarian Transplantation and Ovarian Secretion. F. H. Martin, Chicago.—p. 336.
173 Autonomic System as Integrator with Special Reference to Urogenital Organs. H. C. Jackson, New York.—p. 346.

158-163. Abstracted in THE JOURNAL, July 21, 1917, pp. 235, 236 and 237.

165-168. Abstracted in THE JOURNAL, July 21, 1917, pp. 236 and 237.

170 and 171. Abstracted in THE JOURNAL, July 21, 1917, p. 237.

Vermont Medicine, Rutland

August, II, No. 8

174 *Neutralization of Virus of Poliomyelitis by Nasal Washings. H. L. Amoss and E. Taylor, Burlington.—p. 189.

174. **Neutralization of Virus of Poliomyelitis by Nasal Washings.**—Tests were made by Amoss and Taylor to determine the effect of concentration of washings on the activity of the virus. Amounts of virus which would certainly produce the infection if injected directly were added to a filtered washing fluid obtained from persons not having been exposed to the infection. The mixtures were separately reduced to small volume in vacuo at low temperatures and injected into monkeys. The results obtained were variable, for reasons which at first were not obvious, but the tests nevertheless showed that the filtered virus in certain amounts may withstand concentration in washing fluids without losing entirely its infective power. The nasopharynx was rinsed with double distilled water and the washings were fractionally sterilized by heating to 60 C. for three successive days. Each person's specimen was handled separately. The virus employed was obtained by filtering a 5 per cent. suspension of glycerolated poliomyelitic monkey spinal cord. To teach 30 c.c. of the washings 7.5 c.c. of the filtered virus were added. The mixture was then incubated at 37 C. for twenty-four hours. Control mixtures of virus and distilled water were subjected to the same incubation. Each cubic centimeter of the mixtures then contained 0.2 c.c. of the filtrate, or at least two minimum lethal doses of the virus. The results of this experiment suggest that the nasal washings of a person suffering from acute poliomyelitis may exercise no restraining influence on an active virus, while those from healthy persons, under identical conditions of preparation, inhibit its activity. The secretions of apparently normal persons vary in the so-called neutralizing power. In each series of experiments the potency of the virus was established by control experiments. The secretions of three persons out of six examined varied in their power to neutralize 0.2 c.c. of the virus filtrate at different times under nearly identical conditions, yet the only known clinical differences consisted in the presence of a rhinitis which appears to remove the inactivating power of the secretions.

The neutralizing substance is apparently rendered inactive by heating to 70 C. Apparently inflammatory conditions of the upper air passages tend to remove or diminish the power of neutralization. But irregularities have been noted, even in the absence of these conditions. The neutralizing substance is water soluble and appears not to be inorganic; it appears to be more or less thermolabile, and its action does not depend on the presence of mucin as such. It is suggested that the production of healthy carriers through contamination with the virus of poliomyelitis may be determined by the presence or absence of this inactivating or neutralizing property in the secretions. Whether this effect operates to prevent actual invasion of the virus and production of infection can only be conjectured. The authors suggest that probably the property is merely accessory and not the essential element on which defense against infection rests. It is more probable that other factors exist which help to determine the issue of the delicate adustment between contamination and infection.

West Virginia Medical Journal, Huntington

July, XIII, No. 1

175 Local Anesthesia in Surgery of Colon and Rectum. W. M. Beach, Pittsburgh.—p. 1.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

August 25, II, No. 2956

1 *Trench Nephritis, Its Later Stages and Treatment. J. M. Clarke. —p. 239.

2 *Reamputation. W. A. Chapple.—p. 242.

3 *Method of Flapless Amputation, with Subcutaneous Division of Bone at Higher Level. W. S. Handley.—p. 244.

4 Thomas Splint for Fractures of Femur. W. Rankin.—p. 248.

5 Dakin's "Dichloramin-T" in Treatment of Wounds of War. J. E. Sweet.—p. 249.

6 Expeditious Method for Study of Enteric Stools. F. B. Bowman. —p. 250.

1. **Trench Nephritis.**—This paper deals with cases of nephritis in a base hospital, the initial stage being over. The seventy-four cases are placed in four groups: 1. Thirteen cases in which there was either a distinct history of a previous attack of nephritis or definite signs of an affection of the kidneys of some standing. 2. Ten cases in which the nephritis was found to have cleared up on admission, though the symptoms of an attack before admission were quite definite. 3. Nineteen cases which completely recovered in the hospital and were discharged cured. 4. Thirty-two cases which left this hospital not cured, though the majority were greatly improved. The onset in nearly all appears to have been sudden, and edema of the face and limbs, with pains in the back, and dyspnea the chief symptoms; the latter was only partly accounted for by the frequency of bronchitis. Edema at onset was present in fifty-seven out of seventy-four patients. Hematuria, generally slight, occurred in many. The chief symptoms of the disease while in the hospital were edema, most often of the face and limbs, much less often general anasarca; as a general rule, edema showed a disposition to clear up fairly quickly, but in bad cases was persistent, sometimes for many weeks, and in a few attended with ascites and pleural effusion; dyspnea, often but not always associated with some bronchial or pulmonary complication; pains in limbs and back, headache, less frequently vomiting, only occasionally diarrhea, a feeling of great prostration and sometimes mild cyanosis; anemia was only present in the more severe cases and uremic fits in one only.

The average duration before admission to this hospital was two to three weeks, and that of the whole illness until the cases were sufficiently recovered for discharge was, in Group 1, 9.6 weeks; in Group 2 (convalescent on admission), three weeks; in Group 3 (recovered in the hospital), 6.8 weeks, and in Group 4, 8.1 weeks. Of sixty-eight patients, three died, eight were discharged slightly improved as permanently unfit, eleven much improved but the urine contained casts and more than a trace of albumin, six fairly well and able to do light work, and thirty-two recovered completely; of eight patients Clarke has not sufficient information.

The treatment consisted of rest in bed; a fixed diet of 2½ pints of milk, 6 ounces of bread, 1 ounce of rice, ½ ounce of butter, 4 ounces of potatoes, 4 ounces of greens, 1 ounce of jam and fruit occasionally. As improvement took place the bread was increased to 8 ounces and the yolk of one or two eggs was added. Later on, 4 ounces of cooked fish or chicken were added and sometimes more bread and butter. Salt was not used as a condiment, nor added by the cook, except in cooking green vegetables. The amount of water was not restricted when once the kidney began to secrete freely. Many of the patients had only a simple diaphoretic mixture with a saline or other purgative required. Hot air baths were used when free diaphoresis was necessary. Nitroglycerin was given when the blood pressure was raised. Iron was given in the later stages if there was anemia. In many cases with deficient urinary excretion on admission, sodium carbonate was used with very satisfactory results in establishing a free flow of urine.

2. **Reamputation.**—Assuming that a reamputation of a limb has to be done, Chapple suggests early reamputation and the saving of weeks of painful and tedious healing; the control of bony proliferation, the avoidance of spurs, and the protection of the bone end from infection, by careful technic in the treatment of the periosteum; the covering of the end of the bone with muscle fascia and skin in such a way as to (*a*) approach the normal heel as a model and (*b*) provide for the most distant muscle attachments possible; the use of button sutures in every case of primary and secondary amputation in cases in which the flaps are large and the skin is stitched, in order to (*a*) keep severed muscles and tendons as nearly as possible in apposition, (*b*) give immunity from the results of suppuration if it occur, (*c*) prevent hemorrhage between the flaps, (*d*) give the minimum area of flaps and the maximum length of stump in cases in which shortness is a locomotive disability.

3. **Method of Flapless Amputation.**—Handley suggests the trial of a method which, while retaining all the important

advantages of the guillotine method, will obviate the necessity of a secondary operation. It is also, he says, the best way of doing the secondary amputation in cases previously submitted to the Kelly method. In such cases it is necessary (*a*) to remove such a length of bone that an adequate covering of soft tissue is provided for what remains; (*b*) to excise the calcified granulations, which do not afford a suitable bed for the spreading epithelium. If calcified granulated tissues are allowed to remain, it is certain that ultimately the skin will be adherent to the end of the bone; (*c*) to do what is necessary with minimum exposure of fresh raw surfaces, since all these cases are necessarily accompanied by sepsis. Handley makes two punctures at the end of the bone at the outer side of the limb, separated by about one third of its circumference and situated 4 inches above the end of the stump. Through one of them a curved pair of forceps is introduced closed, and is insinuated round the bone until it is able to seize the end of the Gigli saw introduced through the outer puncture. The pair of forceps is then withdrawn, bringing with it the saw. The bone is now divided, care being taken not to rasp the soft tissues. The punctures are made on the side of the limb remote from the main artery so as to avoid all risk of injury to the large vessels by the action of the saw. The end of the bone is now seized by lion forceps and with the aid of a periosteal elevator is easily separated from the soft tissues and removed. Excise the layer of calcified granulated tissue and insert one or two sutures, making ample provision for drainage. In patients exhausted by long continued suppuration it may even be advisable to perform the operation in two stages. The first stage is the subcutaneous division of the bone at the selected level. This operation should run an aseptic course. In a few days the ends of the marrow canal will be sealed by a layer of granulation tissue, and the isolated distal end of the bone can be removed with a minimum risk of osteomyelitis in the proximal end. The method can be used for primary amputations, and Handley has successfully employed it on several occasions.

Journal of Tropical Medicine and Hygiene, London

August 15, XX, No. 16

7 Tropical Diseases Met with in Balkanic and Adriatic Zones. A. Castellani.—p. 181.

Lancet, London

August 25, II, No. 4904

8 Students' Number.—p. 267.

Archives des Maladies du Cœur, etc., Paris

August, X, No. 8, pp. 353-400

9 *Subacute Endocarditis plus Pulmonary Endarteritis with Chronic Heart Disease. R. Lutembacher.—p. 353.

9. **Subacute Endocarditis with Chronic Heart Disease.**—Lutembacher gives illustrated descriptions of the necropsy findings in thirteen cases of chronic heart disease. They confirm the assumption that patients with chronic cardiovascular disease do not die from the progress of the disease but succumb to superposed infectious processes, independent of asystolia. The subacute septicemia entails anemia and thrombosis. His patients were all young, without much dilatation of the heart, and compensation had been perfect or had only occasionally briefly lapsed. Suddenly, after some casual infectious sore throat or childbirth they began to exhibit symptoms of infectious disease, slight jaundice and symptoms of embolism in spleen, kidneys or skin. Although the germs are not very virulent and the infectious process keeps subacute, yet its tenacity and fatal outcome render it actually malignant. There is another form of this secondary endocarditis in which the infectious process soon dies out. The outlook is grave only in case embolism develops; otherwise, after infarction in spleen or kidney, all subsides. Lutembacher reiterates that the embolism accident is only the expression of an infectious process; in several of the cases here described the emboli were swarming with microbes, generally streptococci. The clots were found in the right or left cavities of the heart or in the pulmonary artery. One in the left auricle was 5 cm. in diameter and 3 cm. thick. Some were pedunculated. The clinical picture from the clot in the left cavities may prove misleading if the chronic heart affection is not known. The general infection, anemia and rapid pulse suggest paratyphoid or tuberculosis; the renal infarcts may be diagnosed as a tuberculous process in the kidney. Death occurs in from three to nine months unless the infection dies out and after infarction of spleen or kidney, or hemiplegia, the patient throws it off.

Archives de Médecine des Enfants, Paris

July, XX, No. 7, pp. 337-392

10 *Twelve New Cases of Infantile Scurvy. J. Comby.—p. 337.
11 Tubercles in the Pons. A. d'Espine and V. Demole.—p. 355.
12 Case of Subcutaneous Emphysema in Diphtheria. Le Soudier.—p. 360.
13 *Congenital Obliteration of the Bile Ducts. J. Comby.—p. 363.

10. **Infantile Scorbutus.**—This later series brings to forty-one Comby's record of scurvy in infants at Paris during eighteen years. None of the children had been getting breast milk or fresh milk or even simply boiled milk; all had been fed with sterilized flour foods. Signs of rachitis were present in nearly every case. The artificial feeding is responsible for both, he declares, saying that if the milk is sterilized—dead milk—there may be both scurvy and rachitis; if the food is fresh—living milk—the child is exposed to danger of rachitis alone. The diagnosis of scurvy is easy for a physician who has once seen a case, but very difficult otherwise. Cases in this series had been mistakenly diagnosed acute articular rheumatism, infectious polyarthritis, polyneuritis, acute myelitis, infantile paralysis, meningitis, typhoid, osteomyelitis, fracture in a child with rickets, syphilitic osteoperiostitis, osteosarcoma, coxalgia or Pott's disease. All the children easily and rapidly threw off their scorbutus, no matter how old or how severe the course. All that is necessary is to think of the possibility of scorbutus and stop all feeding from cans, returning to fresh milk, raw or merely boiled, giving two or three teaspoonfuls a day of orange or grape juice or lemonade. Children over 18 months old can be given soft mashed potato. Meat juice is not necessary. Every child taking sterilized milk is liable to develop scurvy.

13. **Congenital Obliteration of Bile Ducts.**—Comby summarizes and comments on Holmes' recent article with this title in an American journal, endorsing the latter's views.

Bulletin de l'Académie de Médecine, Paris

August 7, LXXVIII, No. 31, pp. 107-118

14 Technic for Treatment of Arteriovenous Aneurysm in the Neck. (Artériorraphie transjugulaire suivie de capitonnage veineux.) R. le Fort.—p. 108.
15 *Device to Protect the Ears against Shock from Explosions. (Obturateurs d'oreilles à chambre de détente.) L. and M. Verain.—p. 111.
16 *Malaria at Salonica. E. Marchoux.—p. 112.
17 *Continuous Aspiration in Treatment of Purulent Pleurisy. J. S. Dauriac.—p. 115.

15. **Device to Protect the Ear Against the Air Shock of Explosions.**—Verain says that over 600 pairs of these little shock absorber obturators are already in use on the firing line and are proving extremely useful, especially for gunners and artillery men in general. They consist of a hollow celluloid or metal olive about 12 mm. long by 9 or 10 mm. wide, provided with a perforated transverse septum inside or other protecting contrivance. The little obturator fits tight into the outer ear but does not deafen it although absorbing the air shock.

16 and 17. See Paris Letter in THE JOURNAL, September 15, p. 926.

Journal de Médecine de Bordeaux

August, LXXVIII, No. 9, pp. 169-192

18 *Traumatic Periosteoma. H. L. Rocher.—p. 171.
19 Case of Regular, Total Hexadactylism. J. Vergely.—p. 174.
20 Fractures of Lower Jaw. J. Vitrac.—p. 176.
21 A Week at the University of Jena in 1909. R. Cruchet.—p. 180.

18. **Traumatic Periosteoma.**—Rocher describes nine cases in which a bullet or scrap of shell grazed the bone or it was injured by contusion otherwise, and the irritated periosteum developed an exuberant bone growth. In four of the cases

the field was practically aseptic, no infectious process developing. In the others the persistence of a fistula indicated that something was wrong. The probe introduced into the fistula passed through a cavity in the periosteoma and the tip could be felt scraping bare bone. When inaccessible to palpation, the periosteoma was shown up by the Roentgen rays. He advises immediate excision, with care to clear away every trace of fungous tissue which otherwise might keep up the suppuration. An electric head lamp is almost indispensable for these operations. Any scrap of periosteum left may bring recurrence. He completes the operation by swabbing with zinc chlorid.

Nourrisson, Paris

July, V, No. 4, pp. 193-256

22 The Intoxication with Disease of the Digestive Apparatus in Infants. A. B. Marfan.—p. 193.
23 Causes of Chronic Stridor in Infants; Four Cases, M. Lavergne and Donzeau.—p. 220.
24 Extraction of Brooch in Throat of Seven Months Infant for Thirty-Four Hours. E. Apert.—p. 230.

Paris Médical

August 11, VII, No. 32, pp. 129-144

25 *Malarial Erythema. H. de Brun.—p. 129.
26 *Erythema after Use of Salvarsan and its Substitutes. G. Milian. —p. 131.
27 Traumatic Facial Diplegia. R. Oppenheim and G. L. Hallez.—p. 136.
28 Superficial Tension of Royat Mineral Waters. G. Perrin.—p. 139.

25. **Malarial Eruptions.**—De Brun states that his systematic examination of 160 patients with malaria has convinced him that it must be classed with the eruptive diseases. He found the eruption marked in sixty-two of the 160 and it developed later in some of the others. Probably the reason why it has escaped attention hitherto, he remarks, is because the eruption is not of a noticeable tint and it fluctuates. It is generally of a pale pink or light violet color but may sometimes be a bright pink or lilac. It may spread all over the body, sparing only the face, neck, soles and palms. The general aspect is much like that of measles only for the lighter tint and that it never displays the miniature flat papules of measles, and is usually restricted to certain regions, mostly the sides of the chest and thorax. In the milder cases the eruption is represented merely by a few scattered patches, not more than ten or twelve in all, scattered on the flanks, the sides of the chest, the region above the trochanters, the vicinity of the false ribs or the axillary margin of the pectoralis. The erythem disappears under pressure but returns at once, and it is liable to blanch as the region is exposed to the air. The erythem is most pronounced in the morning; bed rest seems to favor its eruption. There was never any subjective symptom from it and he never saw signs of desquamation. The erythem seems to appear and disappear in waves. The momentary complete eclipses are characteristic, as also the final complete disappearance. Probably the patients with negative findings had been examined only during the intermissions of the eruption. No regularity in the development of the waves could be detected; the eruption was noted as well in the febrile as in the afebrile patients, and whatever its intensity, its evolution was always silent. In short, he adds in conclusion, the erythem of malaria occupies a special place in the group of toxidermias.

26. **Eruptions Under Salvarsan.**—Milian noted eruptions of different types in over 3 per cent. of 326 men being treated with salvarsan or neosalvarsan and in over 7 per cent. of 206 women. They were more common possibly with intravenous than with intramuscular injections of the drug. In three more recent cases there was a grave exfoliating erythrodermia and in two others rubeola developed immediately after the injection. He is inclined to accept the idea that the drug has a stimulating action on certain germs, including the unknown germ of rubeola, notwithstanding its destructive action on spirochetes. The phenomenon, he continues, is like mercurial stomatitis. The mercury does not cause the stomatitis directly, but it stimulates germs already present on the gums to start the stomatitis. Boils are liable to develop under salvarsan in those with furunculosis, and lichen planus to flare up anew.

Presse Médicale, Paris

July 26, XXV, No. 42, pp. 433-440

29 *Diagnosis of Tuberculous Otitis. M. Lermoyez.—p. 433.
30 Management of Malaria in Soldiers. Wurtz.—p. 435.
31 Aspect of Stools in Atypical Forms of Amebic Dysentery. C. Mattéi and M. Bloch.—p. 436.
32 Alcohol in Disinfection of the Hands. E. Viguier.—p. 437.

29. **Tuberculous Otorrhea.**—Lermoyez insists that many cases of otitis media are the work of the tubercle bacillus. He found tuberculous otorrhea ten times to every ninety osteomyelitic cases. In 20 per cent. of the tuberculous otorrheas both ears were affected. Fully 75 per cent. of all the cases he has encountered were in children, but among the adults affected there were four times as many men as women. He declares that we must stop looking at such patients through the keyhole and bring them out into the open for examination. A suppurating bone process requires treatment along the same lines whether it is in the ear or hip joint, and exclusion of tuberculosis and syphilis is the first step. The tuberculous nature of the process may be suspected only from the lack of normal healing after a mastoid operation. Even a retrospective diagnosis like this may be important as a guide to further treatment. Other aids in the differential diagnosis are the insidious onset, the paradoxic deafness, the white caries, pale granulations, and the persisting fistula. Microscopic examination of one of the pale granulations may reveal the tuberculous follicle, and inoculation of guinea-pigs is conclusive. He warns against tuberculin tests, as any reaction at the focus to a tuberculin test is liable to have disastrous effects in the ear. It might even bring on facial paralysis, labyrinthitis or meningitis, and hence should be strictly proscribed.

Progrès Médical, Paris

July 28, XXXII, No. 30, pp. 249-256

33 *The Oculocardiac Reflex in Bradycardia. A. Mougeot.—p. 249.
34 *Emetin plus Arsenic in Treatment of Amebic Dysentery. H. Aimé.—p. 253.

August 4, No. 31, pp. 257-264

35 *Paroxysmal Stuttering. M. Briant and J. Philippe.—p. 257.
36 Choice of Anesthetic in War Surgery. G. Jeanneney.—p. 261.
37 Invaliding of Soldiers with General Paralysis. J. Crinon.—p. 262.

33. **Significance of the Oculocardiac Reflex in Bradycardia.**—Mougeot's experience with fourteen patients with bradycardia has confirmed the assumption that the persistence of the oculocardiac reflex eliminates true heart block from the diagnosis and proves the nervous origin of the bradycardia. On the other hand, a negative response to the ocular test does not decisively disprove the nervous nature of the trouble. In some of the men suffering from shell shock he has found total sinusal bradycardia with no oculocardiac reaction. He explains the mechanism for this, ascribing it to the anastomoses described by Ramon y Cajal between the posterior root of the trigeminal and the tenth and eleventh pairs.

34. **Combined Emetin and Arsenic Treatment of Amebic Dysentery.**—Aimé reports prompt improvement in eighteen cases of amebic dysentery, that had long resisted other measures, when he instituted combined emetin and atoxyl treatment. The atoxyl was the only form of arsenic available at the time. Three of the men were apparently completely cured and ten others much improved. Even in the five cases listed as failures, the general health showed great benefit.

35. **Stuttering as Symptom of Shell Shock.**—Briand and Philippe comment on the remarkably small number of cases of stuttering brought on or aroused by the emotional stress of the war. In one case the soldier had stuttered from childhood. His speech had been natural until the age of 4 when, after a severe fright, he began to stutter and has had periods of stuttering since, alternating with periods of normal speech. The stuttering came on again in a severe form after shell shock, the features of the case analogous to those with rebellious deafmutism of emotional origin. The course of training which conquered the tendency to stuttering is described in detail. It commenced with breathing exercises, showing the patient the tracings and how he must learn to manage the diaphragm to bring the tracing to normal, training him in exerting the muscles necessary to regulate dia-

phragm functioning. This was accompanied by reading exercises in solitude, slowly reading the words in a low voice to himself, noting the letters that start the stuttering and meeting each one with a deeper, more prolonged respiration. The breathing exercises are done more readily while walking slowly than when seated or reclining. Any overexertion, exhaustion or strong emotion is liable to bring a setback. In the case described the stuttering was conquered in the course of three weeks.

Revue Médicale de la Suisse Romande, Geneva

March, XXXVII, No. 3, pp. 93-172

38 Recklinghausen's Disease in Grandmother, Mother and Daughter, Otherwise Apparently Healthy. C. Du Bois.—p. 93.
39 *Estimation of Arterial Blood Pressure by Auscultation Findings. J. Tchertkoff.—p. 104.
40 Microscopic Study of Gonorrheal Lesions in the Male. J. Wintsch. —p. 113.
41 *Purpura Affecting the Bladder. C. Perrier.—p. 139.
42 *Fastening the Tube in the Throat. (La méthode du Prof. Polverini, de Milan, pour la fixation du tube, dans les sténoses laryngées.) E. Bernasconi.—p. 144.
43 Acute Circumscribed Edema of Lip and Cheeks, also around the Anus. E. de La Harpe.—p. 151.

May, No. 5, pp. 253-328

44 *Mushroom Poisonings in Geneva District in 1916. M. Roch.—p. 253.
45 Heart Disturbances and Military Service. E. Thomas.—p. 270.
46 *Dilatation with Metallic Mercury and Catheterization under Screen Control for Cicatricial Stenosis of the Esophagus. E. Kummer and G. Moppert.—p. 284.
47 *Remission for Nine Days in Case of Fatal Mushroom Poisoning. P. Gautier and C. Saloz.—p. 291.

39. **Auscultation of the Blood Pressure.**—Tchertkoff gives the tabulated findings with Korotkoff's method and with Pachon's oscillometer. He declares that the former is the simplest, the easiest and the least exposed to subjective errors. The findings are as exact as with the oscillometer for the minimal pressure and are more reliable for the maximal. The Riva-Rocci cuff is placed on the arm at the lower third and we listen through a small phonendoscope or stethoscope placed lightly on the humeral artery in the bend of the elbow. As the cuff is inflated we hear nothing, but as the mercury drops we hear four phases of sounds and a phase of silence. These phases are so distinct and significant that this rapid method seems destined to supplant all others. He tabulates the findings in twenty-eight reclining patients, the arm lying along the body, also in eleven reclining with the wrist on a level with the heart, and in ten in which the oscillometer and the Korotkoff were each applied to the humeral artery.

41. **Purpura Affecting the Bladder.**—Perrier's patient was a man of 31. There were other manifestations of the purpura on the skin. The previously healthy man was free from venereal disease and the hematuria had developed after a few days of high fever. In a second case, the young man had no appreciable manifestations of the purpura except in the bladder. When one has once seen the patches of purpura in the bladder it is impossible ever to mistake them again unless possibly for the patches of ecchymosis sometimes found in the bladder with incipient local tuberculosis.

42. **Fastening the Intubation Tube in the Throat.**—Bernasconi expatiates on the great advantages of Polverini's method of holding the tube in place by a thread brought out through the middle of the neck below the chin. There are no blood vessels or nerves in this region to be injured, and the needle passes readily through the aponeurosis, the thyroid membrane and adipose tissue. When it is a question otherwise of tracheotomy, this method of fastening the tube will be found comparatively simple and always reliable. The O'Dwyer tube has two small holes drilled at the front near the usual thread hole. The finger is introduced into the throat as for intubation. An ordinary long and stout needle, carrying a long, strong but not too heavy silk thread, is inserted into the neck exactly on the median line, and is passed through the thyroid membrane at the junction of the middle and lower thirds. With the index finger of the left hand introduced into the throat, as for intubation, the point of the needle is felt as it enters the throat and is guided upward until it can be seized and drawn out of the mouth, with its thread, above, the ends of the thread projecting from the throat below. The upper end is passed through the two holes made for it in the head of the tube and is tied in a double knot, about 50 or 60 cm. below the upper free ends of the thread. The tube is then placed in the throat, and the long lower ends of the thread projecting from the neck are tied over gauze and protected by gauze fastened to the neck with adhesive plaster. The tube can be drawn out to be cleansed by pulling on the upper ends of the thread after untying the lower ends. If the tube has to be worn a long time, Polverini usually cuts off the upper ends of the thread as the child is liable to bite them off and the parts left might slide down and obstruct the tube. In the five cases inspected by Bernasconi, the children had worn their tubes for several months and ate fluid and solid foods as if there was nothing in their throats. As the holes are in the front of the head of the tube, this prevents its twisting around the thread. (This method of ensuring the stability of intubation has already been described in THE JOURNAL, Feb. 10, 1917, p. 495.) The results in the twenty cases in which Polverini has applied this method in the last ten years have apparently confirmed its harmlessness while there could never be any question as to its efficiency. Two illustrations show the exact technic.

44. **Mushroom Poisoning.**—Roch relates that there was an unusual number of cases of mushroom poisoning in the Geneva district last fall. He knows of 100 cases, with four deaths, and summarizes the details from the twenty-four families involved. Early and profuse vomiting was what saved many from death, and the physician should strive to ensure this in all cases. When any one shows signs of mushroom poisoning, all who have partaken of the meal should be made to vomit freely, even although they show no symptoms at the time of anything wrong. Aside from this indication, it seems useless to give emetics and purgatives because they do not act until there is nothing left to evacuate. They merely increase and prolong the emetic-cathartic phenomena of the poisoning to no purpose. No benefit seemed to be derived from charcoal, but at least it did no harm. Treatment can be only symptomatic, drinking copiously, injecting saline and giving laudanum, camphor or caffein as indicated. Roch analyzes the clinical picture induced by the different mushrooms. The *Entoloma lividus* was responsible for a number of the poisonings. This mushroom was exceptionally abundant last September. It has a delicate white meat, with a tempting odor, and deceptively resembles some harmless varieties. One or two hours after eating there is sudden uncontrollable vomiting, diarrhea for four or five days, intense thirst, sometimes pupil disturbances and syncopes, the throat intensely dry. The gravity of the accidents with mushroom poisoning is usually in inverse proportion to the length of the incubation. When the vomiting comes on early the attack is usually mild. Roch's article is a comprehensive study of poisoning from the various species of mushrooms.

46. **Treatment of Cicatricial Stenosis of the Esophagus.**—The patient in the severe case described, with illustrations, was a robust man of 42. By persevering retrograde dilatation over several months he is now practically cured. Kummer and Moppert found metallic mercury a great help in this. The mercury does not stick to the walls, and by its weight it settles down on the constricted portion of the esophagus and, by its property of separating into minute globules, its heavy droplets worm their way through the stricture and help dilate it. They say that there need be no fear of poisoning as metallic mercury is not absorbed at all. At first they rinsed it out through the gastrostomy opening, but later allowed it to pass off through the bowel. It took from one to eighteen days for the 10 c.c. to be entirely voided. It never caused any disorder except sometimes a little tension in the abdomen the few hours that preceded its evacuation by the rectum. Another advantage of the mercury was that it cast such a clear shadow that this, besides its mechanical aid, materially facilitated the working of the dilating catheter into the stricture during radioscopy. In conclusion they endorse the suggestion that when a caustic has been swal-

lowed, an esophagus sound should be introduced at once and left permanently until healing is complete. The presence of the sound not only wards off stricture but it allows the patient to be fed from the first.

47. **Mushroom Poisoning.**—The robust man had apparently recovered from the poisoning with the amanita mushroom and had returned home from the hospital. After nine days of complete remission, the symptoms returned and proved fatal the thirtieth day after the mushrooms had been eaten.

Correspondenz-Blatt für Schweizer Aerzte, Basel

August 4, XLVII, No. 31, pp. 993-1024

48 *Problems of Metabolism and Immunity in Dermatology. B. Bloch.—p. 993.
49 *Cause of Granulation of Blood in Malaria. L. Hirschfeld.—p. 1007.
50 Metal-Albumin Preparation for Diagnosis of Pregnancy. III. (Schwangerschaftsreaktion mit Dia-Sorcym-Placentae.) K. Kottmann.—p. 1012.

48. **Problems of Metabolism and Immunity in Dermatology.**—Among the points to which Bloch calls attention is the preeminently important part played by the skin in the phenomena of allergic immunity and sensitization. This is in marked contrast to serum immunity, as in tetanus and diphtheria, in which the blood is the bearer of the defensive forces. The history of our knowledge of immunity, beginning with Jenner's vaccination, has almost invariably made its progress by study of the skin, from Koch's fundamental inoculation of guinea-pigs with tuberculosis to the Pirquet reaction, trichophytosis, syphilis and tuberculosis. Infectious diseases which are followed by allergic modifications that confer immunity, and the acute exanthems, scarlet fever, measles, etc., which are likewise distinguished by conferring immunity, all play such an important rôle in the skin that this suggests that the skin has some biologic function not yet fully understood. The skin is open to the external world and is thus exposed to all infections coming from without and it has adapted itself to defensive reactions. This adaptation is acquired, not natural, as is evidenced by the lesser reacting power of the skin of animals and of young infants. By this function of the skin part, at least, of the invading germs are held back and the internal organs spared. He reiterates that the body fluids are not concerned in immunity; it is of tissue origin. He has presented direct proof of this with trichophytosis; a scrap of skin from a person who had had this affection, transplanted into a normal person, conferred allergy on the latter. This seems to be the case also with variola. In discussing the part played by the skin in syphilis, he remarks that salvarsan cures so quickly that the tissues have not had time to develop allergic modifications under the influence of the spirochetes. The consequence is that a new infection from without, or the rousing of some slumbering nest of spirochetes, induces a response in the body the same as if the individual had never been infected with syphilis. We are liable now to encounter patients with a fresh primary lesion, buboes and syphilids, all at once.

49. **Granulation of Malarial Blood Is Due to the Anemia.**—Hirschfeld discusses the layer of granulations which is evident, even to the naked eye, when a smear is taken of malarial blood. The corpuscles seem to pile up at some one point of the smear. He noticed this in several hundreds of patients with acute or chronic malaria, and it was extremely pronounced in malarial coma and blackwater fever. His analysis of the conditions has shown that the red corpuscles drop out of the blood plasma the more readily, the more diluted the blood. Hence the speed with which the blood corpuscles form a sediment, in their own blood plasma, is directly proportional to the degree of the anemia. It is this rapid dropping out of the reds in malarial blood which gives it the granulated aspect. It has nothing to do with the coagulability of the blood nor with agglutination phenomena. As soon as the number of corpuscles falls below a certain ratio to the blood plasma, then this rapid dropping down of the reds is liable to occur. In other words, it is a phenomenon of hypoglobulia. By adding plain plasma to any blood a point is reached at which the reds drop to the bottom. It is a sign of anemia, he emphasizes, but he has had no chance to study it on any but malarial subjects. In physiologic salt solution the reds are in a condition of suspension balance, and they do not drop down. In normal blood the corpuscles are so close together that the elasticity of the others prevents the sinking to the bottom of a corpuscle that has started to fall. In anemic blood this hindrance to sedimentation is lacking, the corpuscles being so few and far apart.

Gazzetta degli Ospedali e delle Cliniche, Milan

July 8, XXXVIII, No. 54, pp. 761-776

51 *Auscultation through the Mouth. G. A. Notari.—p. 767.

51. **Auscultation Through the Mouth.**—Notari describes a puzzling case in which by auscultating the percussion sounds through the mouth an exact differential diagnosis was possible. This oral auscultation has been introduced mainly by Cardarelli, Galvagni, Frugoni and other Italians. It throws light on certain respiratory and heart disturbances otherwise inexplicable. In the present case, the tracings show intermittent respiratory functioning not synchronous with the heart action. In all the other cases published the heart was evidently responsible for the respiratory intermittent functioning, but in this case the diaphragm seemed to be exclusively responsible. Oscillatory vibration of the diaphragm was manifest on oral auscultation, a respiratory neurosis, in an otherwise clinically normal soldier.

Policlinico, Rome

August 19, XXIV, No. 34, pp. 1033-1060

52 *Vitiligo with Inherited Syphilis; Two Cases. P. F. Arullani.—p. 1033.
53 Geometric Principles Applied to Roentgen Localization of Foreign Bodies. G. Egidi.—p. 1038.
54 Industrial Hygiene. (Per la vigilanza igienico-sanitaria del lavoro.) A. Ranelletti.—p. 1040.
55 The Red Cross and Tuberculosis. P. Bolognini.—p. 1043.
56 Suggestions to Improve the Surgical and Medical Service at the Front. G. Perez.—p. 1045; G. Pisano.—p. 1046.
57 Suggestion to Use Pine Tar in Early Treatment of Wounds. T. Rossini.—p. 1048.

52. **Vitiligo with Inherited Syphilis.**—The Wassermann reaction was negative in one of the two cases reported, and was not tested in the other, but the diagnosis of inherited syphilis was beyond question in both. The father of one had progressive paralysis and the daughter, a woman now 30, showed signs of incipient tabes besides the vitiligo and tendency to hysteria. The skin affection had been manifest for fifteen years in this case and for ten in the other patient, a man of 41. There was nothing to suggest tuberculosis in either case.

Riforma Medica, Naples

July 21, XXXIII, No. 29, pp. 729-748

58 Factitious Talipes. A. Mori.—p. 729. Concluded in No. 30, p. 755.
59 Symptoms of Hysteria Complicating Relics of Neuritic Phenomena; Cure by Suggestion. A. Ziveri.—p. 735.

August 4, No. 31, pp. 769-788

60 Consent to Operations. (Sulla obligatorieta degli atti operativi.) L. Ferrannini.—p. 769.
61 Mixed Typhoid and Paratyphoid Infections. A. Zironi.—p. 771.
62 The Latest Regulations as to Physical Disqualifications for Military Service. Editorial.—p. 787.

August 11, No. 32, pp. 789-808

63 *Syphilis in the Army, and Prophylaxis. G. Moscati.—p. 789.
64 *Gas Gangrene and Phlegmons. A. Nacciarone.—p. 790. Commenced in No. 31, p. 772.
65 Primary Tuberculous Ulceration of the Tongue. P. Amorosi.—p. 798.
66 The Inventor of the Immersion Objective for Microscopes. G. B. Amici, 1786-1863. A. Ferrannini.—p. 803.

63. **Syphilis in the Army.**—Moscati emphasizes the necessity for seeking out every syphilitic in the army and ensuring him thorough treatment year after year. According to the system in vogue, men on the firing line with early syphilis are treated there and a course in the hospital is not considered necessary at this stage. The consequence is that the men conceal their syphilis. Rheumatoid pains, etc., are reported to the physician and the men are sent to the home zone hospitals for treatment of "rheumatism." Moscati has found a large proportion of the rheumatism cases to be syphilis alone or associated with rheumatism. The percentage of cases of syphilis during peace times is out of proportion to

the number of cases of declared syphilis now in military circles. Some new factor has intervened and this, he thinks, is either the disinclination to confess venereal disease or ignorance of its existence. It is undoubtedly a fact that ignored syphilis is responsible for the nonhealing of wounds in certain cases.

64. **Gas Phlegmon and Gas Gangrene.**—Nacciarone reports in detail about twenty cases to emphasize the advantages of the technic advocated. When applied within the first six hours he counts on 90 per cent. of cures even when the gas gangrene had developed into a vast lesion. When the bone lesion was limited or only the soft parts were involved and not over twelve hours had elapsed he was able to cure 88 per cent. of the patients without mutilations. In those in which twenty-four hours had elapsed, he cured 85 per cent., including 4 per cent. requiring mutilating operations. In 82 per cent. the complete functional use of the limb was restored. He warns that treatment of wounds with balsam of Peru cuts off the oxygen and thus favors the development of anaerobic germs. Whatever the state of the infection, he begins by degreasing with benzin, then drying and dabbing with 10 per cent. tincture of iodin, swabbing the whole limb with this. Then he incises the limb lengthwise, making as many long incisions parallel to the axis of the limb as are necessary to open up all the muscles involved and open the bone to the air. The first incision is carried through the hole made by the projectile. For the leg he makes at least three incisions, one each in the front, rear and side. There must be ample access to inspect the spaces between each muscle. After the skin is incised, he separates the muscles and fascia with the fingers, refraining from injuring the vital connections between muscles and vessels, but making way for copious irrigation of all the interspaces between muscles and aponeuroses, not leaving even the remotest crevice unopened up. He uses up in ten minutes as much as 20 liters of the iodin antiseptic solution. He has even used 40 liters in some cases, sponging it into every crevice with gauze held with forceps. When no more gas can be forced out by pressure on the tissues and there is no further odor in the depths, he delimits the part involved with the actual cautery to form a wall against further extension, or makes a ring of subcutaneous injections of a 2 per cent. iodized solution. Three or four drain tubes are then introduced at the best points for effectual drainage, draining besides with gauze, after flushing again with the iodin solution. The gas process generally extends upward. This treatment is repeated from one to three times in the twenty-four hours, clearing out any necrotic tissues found. The fetid odor usually lasts for three or four dressings. When suppuration sets in, the patient may be regarded as out of danger from the gas infection. In addition to these local measures, which he describes with minute detail, he combats the general intoxication by saline infusion (for which he uses a special formula) and stimulates the organic defences by giving a little quinin twice a day, with camphorated oil, a little brandy and tepid black coffee. His experience with iodin, he declares, speaks for itself, the men with severe gas gangrene returning to their posts, with complete functional use of their limb, in thirty or forty days. His formula for the antiseptic fluid with which he combats the gas infection is as follows: iodin, 1 gm.; sodium iodid, 1 gm.; sodium chlorid, 3 gm.; sodium carbonate, 2 gm., with water to 1,000 gm. It is not necessary to boil the water, he says, these ingredients rapidly sterilizing it. He finds it convenient to keep a mother solution constantly on hand consisting of 25 gm. each of iodin and sodium iodid; 75 gm. sodium chlorid, and 50 gm. sodium carbonate, with 1,000 gm. water. From 40 to 120 c.c. of this mixture are added to each liter of the water ready to use.

Rivista Critica di Clinica Medica, Florence

June 16, XVIII, No. 24, 253-260

67 Extremely Painful Hyperesthesia of the Knee of Hysteric Origin in Soldier. (Simulazione o nevrosi?) A. Sbrocchi.—p. 257. Conclusion.

July 14, No. 28, pp. 285-292

68 *Chronic Hemorrhagic Purpura and its Pathogenesis. F. Schupfer. —p. 285. Commenced in No. 23, p. 245.

69 Paralysis from War Wounds; Four Cases. G. Barbensi.—p. 290. Commenced in No. 27, p. 280.

July 28, No. 30, pp. 301-308

70 *Clinical and Experimental Research on Infectious Jaundice in Troops on Active Service. I. Civalleri.—p. 301. Commenced in No. 29, p. 293.

71 Infectious Hemorrhagic Purpura with Initial Abdominal Symptoms in Soldier. L. Tomasetti and A. Costa.—p. 303.

68. **Chronic Hemorrhagic Purpura.**—Schupfer reports in detail with necropsy a case of this kind in a woman of 29 who was under observation for fourteen years, and compares this case with twenty-six others encountered during the same period. He is convinced that it is more than a coincidence that tuberculosis was evident in a large proportion of the cases and in two there was an unmistakable hereditary burden, so that 55.54 per cent. of the total twenty-seven were plainly tuberculous. The necropsy of the case described in detail showed tuberculous cavities in the left lung with numerous tubercle bacilli. The right suprarenal was intact but the left was much enlarged and the seat of tuberculous disease. The woman had had fifteen severe recurrences of the purpura in the course of ten years. No tendency to hemophilia was discoverable in the family. The first attack subsided under ergot, epinephrin, iron and sodium salicylate. There was no further trouble for nearly a year. Then the febrile purpura returned with enlargement of the spleen, but subsided under injections of normal horse serum, calcium chlorid by the mouth and gelatin in enemas. Schupfer reviews the literature on the subject of chronic purpura, and claims that the tubercle bacillus is indirectly responsible in certain cases, and the endocrine system is probably involved in all.

70. **Camp Infectious Jaundice.**—Civalleri regards the jaundice in question as undoubtedly the same disease as that described by Japanese authors as spirochetosis, but he was unable to transmit the disease from man to guinea-pigs except in one instance, while the transmission from man to man was common. Transmission from guinea-pig to guinea-pig was unfailing, using the urine. The bile also gave positive results as it swarmed with the spirochetes. Transmission from one guinea-pig to others was also demonstrated by means of contaminated food.

Brazil-Medico, Rio de Janeiro

July 14, XXXI, No. 28, pp. 233-242

72 *Circular Heart Murmur. (Sopro circular de Miguel Couto.) J. L. de Mesquita.—p. 233.

July 21, No. 29, pp. 243-250

73 The Protozoan Parasites of the Mollusk Polydora Socialis. G. le Faria and others.—p. 243.

74 Research on Nematodes of Allodapa Species. A. de B. Barreto. —p. 243.

75 Epidemic Poliomyelitis with Cephaloplegia for Ten Days in Year Old Child. Recovery. R. Moreira.—p. 244.

72. **Circular Heart Murmur.**—De Mesquita refers to the murmur with circular propagation to which attention was called a while ago by Miguel Couto, the leading internist of Brazil. He had noticed it only with mitral insufficiency. De Mesquita reports two cases which show that it may be encountered both during and without asystoly. His further experience has demonstrated that neither mitral relative insufficiency nor passive congestion of the lungs has anything to do with its production. In a typical case described, the girl had had acute rheumatism a year before. The heart was somewhat enlarged and the murmur was holosystolic. It was heard starting at the apex and running around the thorax in a circle, heard in the left axilla, the interscapular region, and the right axilla, and it was still perceptible in the front right half of the chest. De Mesquita discusses the mechanism of its production. Its disappearance seems to be a favorable omen.

Cronica Medica, Lima, Peru

August, XXXIV, No. 650, pp. 269-310

76 *Physiopathologic Study of Cholesterol. H. Castañeda.—p. 273.

77 *Alcoholic Polyneuritis. E. Odriozola.—p. 282.

78 Factitious Affections. G. F. Davila.—p. 287. Conclusion.

79 Regulation of Prostitution. Committee Report.—p. 306.

76. **Present Status of Our Knowledge of Cholesterol.**—Castañeda describes the present assumptions as to the production of cholesterol in the body and its elimination, mentioning the various tests for it in vogue. The significance of the cholesterol content of the blood in different conditions is also discussed.

77. **Alcoholic Polyneuritis.**—Odriozola analyzes a case in a syphilitic in which the rapid onset of the symptoms of polyneuritis seemed to exclude tabes and the absence of sphincter trouble excluded diffuse myelitis. With syphilitic paralysis there is contracture, while in this case the paralysis was of the flaccid type. The known abuse of alcohol suggested a toxic origin for the pains and paraplegia. The prognosis of alcoholic polyneuritis is favorable, as a rule, but he has had two cases in which fatal bulbar symptoms became superposed, the clinical picture deceptively simulating Landry's ascending paralysis. In treatment, besides massage of the groups of muscles involved and reeducation of movements, systematic galvanization of all the muscles involved and strychnin are liable to give great relief and improvement. Atrophy of the muscles comes on early but the above measures properly applied arrest it almost without fail. Practically complete recovery depends only on the perseverance and skill with which the above measures are applied.

Prensa Medica Argentina, Buenos Aires

July 30, IV, No. 6, pp. 67-76

80 Transplantable Spontaneous Pavement Epithelioma in White Rat. A. H. Roffo.—p. 67.
81 Transverse Displacement of the Testicle plus Supernumerary Testicle. L. E. Pagliere and E. Pozzi.—p. 68.

August 10, No. 7, pp. 77-88

82 *Enrichment of Tubercle Bacilli in Sputum. L. Ymaz.—p. 79.
83 *Echinococcus Cyst in the Liver Perforating into Pleura. C. I. Allende and N. D. Rosso.—p. 80.

82. **Enrichment of Bacilli in Sputum.**—Ymaz first treats the sputum with a 50 per cent. antiformin solution in an amount equal to or only a little less than that of the sputum. It is possible to use instead ordinary Javel water or sodium hydrate. This does not seem to affect the shape or staining properties of the bacilli. Boiling the mixture is a help. He then adds to the homogeneized sputum an equal amount of syrup (*jarabe*) with specific gravity of 1.260. A small amount of ether is added and well mixed, to form an emulsion, but not agitating with the receptacle closed. Then, after lively centrifugation the bacilli will be found in the whitish zone that forms at the plane separating the two fluids. The ether aids in bringing the bacilli to the surface. He says this technic is an efficient method for enrichment while it does away with the necessity for estimating the specific gravity.

83. **Echinococcus Cyst of the Liver Perforating Into the Pleura.**—An operation for supposed purulent pleurisy was done on a married woman of 43, and the pleura was found to contain pus and numbers of daughter cysts, some empty and others intact. The cavity was drained with a large rubber drain but the temperature persisted high and dulness at the seventh rib confirmed the assumption of an echinococcus cyst in the upper part of the liver. This was drained from below the diaphragm through a second incision, suturing the lips of the cyst to the skin. Bile came away with pus but the condition rapidly improved. The retrospective diagnosis was that the cyst had perforated first into a bronchus, the symptoms and expectoration at the time having been ascribed to an acute bronchial affection. A few weeks later the cyst perforated into the pleural cavity, the bronchial outlet evidently having proved insufficient. The ample drainage at the lowest point at both operations conquered the disease. While the cyst was being rinsed out with hydrogen dioxid, some of it got into the bronchi through the primary perforation and poured out through the mouth, causing cyanosis and asphyxia from the foam filling the air passages on that side. The blood pressure dropped rapidly and the condition seemed alarming at first, but the suffocation was gradually overcome. The patient had become unconscious but under stimulants to the heart and inhalation of oxygen she very slowly revived, the blood pressure slowly returning to normal. The next morning there was much mental confusion and dysphasia, with a suggestion of total right hemiplegia. The motor phenomena subsided during the day but the confusion persisted and did not finally disappear until the fourth day. Recovery then was soon practically complete.

Revista de la Asociacion Medica Argentina, Buenos Aires

July, XXVI, No. 152, pp. 967-1254

84 *Tuberculosis and Paroxysmal Thyroid Insufficiency. (Caso de rheumatismo tiroideo y menstruacion febril.) E. Albina.—p. 967.
85 Memoirs of a Physician Hygienist. E. R. Coni.—p. 984. To be continued. See news item in THE JOURNAL, September 15, p. 926.
86 Crime by the Irresponsible. (Informe del defensor de C. S. Godino.) R. Emiliani.—p. 1021.
87 Psammoma of the Sheath of the Optic Nerve. P. B. Ferro.—p. 1040.
88 *Surgical Repair. (Anaplasticas.) M. Gamboa.—p. 1053.
89 *Chronic Appendicitis and Sclerocystic Ovaritis. R. S. Gomez. —p. 1085.
90 *Cholelithiasis with Menstrual Hypercholesterolemia. G. P. Goñalons.—p. 1091.
91 *Coagulation Index of Blood. J. M. Hitce and R. Iribarne.—p. 1094.
92 *Correction of Atresia of the Nostrils. J. M. Jorge, Jr.—p. 1102.
93 History of Bubonic Plague. A. M. del Pont.—p. 1115. Continuation.
94 *Best Mode of Access to the Space below the Diaphragm. L. Merola.—p. 1164.

84. **Tuberculosis and Paroxysmal Thyroid Insufficiency.**—Albina's patient was a girl of 14 who had been menstruating for eight months. Each menstrual period was preceded by a day of subfebrile temperature, sweating and persisting pains in some of the joints. They swelled and were tender but there was no edema in the region nor atrophy of muscle tissue. All these disturbances subsided with the menses; during the intervals there was no pain or fever. The findings at one apex were suspicious of tuberculosis, and the general aspect suggested defective thyroid functioning. The lack of any benefit from the salicylates suggested that the joint troubles were of toxic origin. The diagnosis of rheumatism from thyroid insufficiency on a tuberculous soil was sustained by treatment on this assumption. Under thyroid treatment the menses returned to normal, without joint disturbances and without fever. The thyroid treatment was then stopped and treatment for incipient tuberculosis was pushed. After ten months of this the patient was restored to clinical health, with no return of pains or fever after the first month. He began treatment by giving sodium bicarbonate freely for three days and then thyroid treatment for three weeks in increasing doses.

88. **Anaplastic Operations.**—Gamboa gives an illustrated description of a number of particularly interesting cases treated by restorative surgical measures. One boy of 11 who had had a large angiosarcoma of the cheek removed showed five years later very little trace of the extensive operation. The defect had been covered with a pedunculated flap from the neck. The other anaplastic operations were to correct contracture or growing together of parts after burns. The left arm of one child of 11 had grown to her side. The principle which Gamboa specially emphasizes is that the scar tissue should all be cut away and discarded, and only normal skin, with its adipose tissue should be used for flaps to repair the defects. When there is flexion from contracture the whole contracting tissue should be cut away and the resulting defect patched with normal tissue. The parts must be kept in extension until the flaps have grown into place. When the plastic operation is on the fingers he advises a single large flap taken from the abdomen. When it has healed in place another operation is necessary to separate the fingers. This gave perfect functional results in his experience.

89. **Chronic Appendicitis and Ovaritis.**—Gomez declares that chronic appendicitis is habitually accompanied by sclerocystic degeneration of the ovaries. The symptoms from the latter should not be overlooked in studying a case of chronic appendicitis. If the cysts are small and few, it suffices to obliterate them with ignipunctures, but if they are large and numerous, or if there are blood cysts or degeneration of the corpora lutea, a wedge including the lesions should be cut out, and the uterus straightened by ligamentopexy if there

is displacement. If the lesions are bilateral or only in the left ovary or there are still other lesions to be attacked, a median laparotomy is required.

90. **Hypercholesterolemia and Menstruation.** — Goñalons' curves show a marked rise in the cholesterol content of the blood during the menses. In some cases the increase was marked also during the days just preceding. He analyzed twenty-seven complete menstrual cycles, recording the cholesterol content of the blood daily for thirty days and in some cases for two or three months. The blood was drawn from the fold of the elbow; the women were all healthy or convalescent.

91. **Coagulation Index of the Blood**—Hitce and Iribarne prevented coagulation of the blood by adding 0.0004 gm. sodium citrate to the 0.04 c.c. of blood in each of six test tubes. Then they restored the coagulating property to the blood by reactivating with progressive amounts of calcium. The amounts used in his tests were, respectively, 0 gm.; 0.0001; 0.0002; 0.0003; 0.0004 and 0.0008 gm. In addition to the coagulating power, he tested the resisting power of the red corpuscles, using a 7 per thousand salt solution in amounts of 4 c.c.; 3.8; 3.6; 3.4; 3.2 and 3 c.c. This supplied an index of coagulation for the individual blood. Discovery of an excessive tendency to coagulation suggests measures to ward off embolism. On the other hand, low coagulating power may give the clue to unsuspected liver disease.

92. **Cicatricial Atresia of the Nose.**—The atresia was the consequence of smallpox lesions. Jorge corrected it by making a horizontal incision just below the nose and suturing to the lower lip of the incision the edge of a square pedunculated flap from the upper arm fastened across the face. The raw side of the flap was turned upward, and the plastic operation when concluded proved very satisfactory, the patient now breathing freely through her nose, and with scarcely a trace of the incision below.

94. **Access to Space Below the Diaphragm.**—Merola lauds the advantages of a slanting incision with resection of the rib. The incision runs from the scapular line downward and inward, following at first the ninth rib. The operation is transpleuro-abdominal and requires a U-shaped suture. This incision is the best mode of access also to the cardia and lower esophagus, as he shows by illustrations taken from the cadaver. For this, the incision is supplemented by a vertical incision beginning at the upper end of the first. This allows a triangular flap to be turned back and after resection of the tenth rib and of part of the eleventh and twelfth, the organs below are exposed. The important field thus opened up is amazingly extensive and access to the deep lying organs rendered simple and easy. The suprarenals are under one's hand, as also the posterior aspect of the liver, etc.

Semana Medica, Buenos Aires

June 28, XXIV, No. 26, pp. 767-810

95 Hemorrhoids. J. M. Jorge, Jr.—p. 767.
96 *Lymphocytosis in Syphilitics. C. P. Mayer and A. C. Gourdy. —p. 779. Conclusion.

96. **Lymphocytosis in Syphilitics.**—This is the conclusion of this extensive communication which has been appearing weekly in the *Semana* nearly all the year. The present installment brings to 502 the number of cases of syphilis tested for lymphocytosis, the data in each case being given with the differential blood count on different occasions. Mayer and Gourdy regard the lymphocytosis as the most constant sign of syphilitic infection saying that it appears with the infection and persists throughout life. With inherited syphilis it does not appear until after infancy. Superposed infectious processes may mask the syphilitic lymphocytosis, but as they subside the latter reappears. It is an earlier phenomenon than the Wassermann reaction, and persists after the latter has disappeared. The lymphocytosis is reactivated by specific treatment although not directly, as the latter does not induce lymphocytosis in nonsyphilitics. They are convinced that the lymphocytosis is a biologic reaction which indicates persistence of the causal spirochetes. Also that this alone justifies the diagnosis of syphilis even when no other signs or symptoms of it are apparent. It may be the only sign of syphilis in the wife or husband of a syphilitic, and lymphocytosis in a wet nurse should always be regarded with suspicion. In conclusion they reiterate that the lymphocytosis persists as an indelible sign of syphilis, and that this persistence indicates that treatment for the syphilis should be kept up interminably. The lymphocyte count is therefore the indispensable complement of the Wassermann test in diagnosis and in estimation of the prognosis. Specific treatment modifies the lymphocytosis but never abolishes it entirely.

Siglo Medico, Madrid

August 4, LXIV, No. 3321, pp. 565-584

97 Mechanism of Enucleation of the Erythroblasts in Mammals. F. Mas y Magro.—p. 566. Concluded in No. 3322, p. 592.
98 *Hematuria with Kidney Stones; Four Cases. A. P. Martin.—p. 568.
99 Present Status of Catheterization of the Duodenum. S. de S. Maria, and M. de Logrono.—p. 572.
100 Acute Edema of the Male Genital Organs. (La genesis de las tumescencias penoescrotales.) Sicilia.—p. 573.
101 Psychasthenia. A. Sanchez-Herrero.—p. 574.

98. **Hematuria with Kidney Stone.**—Martin remarks that nephrolithiasis should be suspected when the urine shows blood after exercise but only a small amount and only transiently. In three of the four personal cases reported this transient hematuria was the only symptom to call attention to the stone in the kidney. In the other case there was pain in both kidneys and occasional hematuria. The cystoscopic findings in the bladder were normal but one kidney was very large, tender and knobby, and the diagnosis of sarcoma was confirmed by other findings.

Russkiy Vrach, Petrograd

XVI, No. 13, pp. 289-312

102 *Pretuberculosis in Children and Treatment with Tuberculin Inunctions. N. R. Blumenau.—p. 289.
103 Old Age as a Physiologic-Pathologic Process. M. S. Milman.—p. 295.
104 Experience with Vaccination against Typhoid. V. V. Pezharskaya. —p. 301. Concluded in No. 14, p. 324.
105 Physiologic Basis for Electrocardiography and Its Clinical Importance. M. M. Gubergritz.—p. 305. Continuation.

102. **Treatment of "Pretuberculosis" in Children.**—Blumenau is convinced that certain subjective symptoms are the work of tubercle bacilli before they have started manifest tuberculosis. This is particularly evident in children, and he recommends for it tuberculin treatment by the inunction technic. He reports experiments on guinea-pigs which apparently confirm that toxins rubbed into the intact skin, after it has been shaved and cleared of grease with ether, pass through the skin as through a special filter, and induce the production of antibodies in the organism. The animals kept well and even increased in weight although they were being given inunctions of diphtheria toxin, given by Moro's technic in a 50 per cent. ointment, rubbed into scarifications, and they survived then the subcutaneous injection of four times the fatal dose of diphtheria toxin. His experiments on animals were not numerous, but the results were so convincing that he applied the method at once to seventy children. The technic he found most effectual was to apply a drop of pure tuberculin to the forearm and then shave off a scrap of skin through it. The mixture of the superficial layer of the epidermis and the tuberculin formed a thin salve, like lanolin, and this mixture on the back of the razor was then rubbed into the skin until dry. A scrap of sticking plaster was then applied over the spot. When removed twenty-four or forty-eight hours later the skin underneath may display a strong, moderate or weak reaction, and the inunction is repeated after an interval corresponding to the strength of the reaction. The dose of tuberculin is also progressively increased to a total of four drops. At first the intervals are usually three or five days, but when the four drop dose is reached, the intervals are a week. The results in the cases of well defined tuberculosis, especially of the lungs, were what might be expected as these types are scarcely amenable to treatment. But in incipient or occult tuberculosis the therapeutic results were prompt and striking.

He gives a brief summary of eighteen cases of various types. Some of the children were only 9 or 10 months old but the majority were between 2 and 13. One child of 13, for example, had been having for six weeks pains in the chest, head and side, coughed a little, sweated freely at night and felt chilly. The appetite was poor and the child was growing thin. There was dulness over the right apex and the temperature wavered between 36.9 and 38.3 C. The tuberculin inunctions were given for a month, a total of ten inunctions. The reaction was pronounced at first but gradually grew less and less distinct while the improvement was marked in every respect. There were no further pains except occasionally in the left side at night when the child lay on that side. The cough disappeared, the appetite returned and the temperature keeps within the normal range, while the child has increased in weight. One 9 months babe had long been coughing and there was a discharge from the ears and from a fistula in suppurating cervical glands, with diffuse dry râles in the lungs. In the course of three and a half months the child had been given twelve inunctions and had increased in weight from 9,000 to 9,500 gm., the cough had ceased, and there was no further discharge from the ears or fistula. The râles had also disappeared.

The parents of children brought to the dispensary often call attention to the child's lassitude, apathy and drowsiness or the reverse, excessive nervousness and irritability, with loss of appetite, restless sleep, frequent and persistent headache, palpitations, cough, pains in the side or chest and in the bones of the arms or legs. The majority of such children are frail, and badly nourished but not all present anemia. The diagnosis of "school anemia" should not be accepted until all other causes have been excluded. It is not enough to examine the child himself; inquiry must be made as to the health of the parents and other relatives, whether any of them have had pleurisy or lingering lung trouble, or any children have died from meningitis, and whether there is any one in the building that coughs much. None of the subjective symptoms are pathognomonic of tuberculosis, of course, but when a possible source of infection is known, the tuberculin test will reveal in many instances that they are the work of chronic self-intoxication.

Hospitalstidende, Copenhagen

July 25, LX, No. 30, pp. 717-740

106 Bullous Psoriasis. A. Kissmeyer.—p. 717.

Ugeskrift for Læger, Copenhagen

July 5, LXXIX, No. 27, pp. 1077-1118

107 *Roentgenotherapy of Sarcomas. S. Nordentoft.—p. 1077.
108 *Roentgenotherapy of Syringomyelia, Acromegaly, Polycythemia, Hypertrophy of the Prostate and Retroperitoneal Tuberculous Glands. S. Nordentoft.—p. 1086.

July 12, No. 28, pp. 1119-1176

109 Present Status of Dietetic Treatment of Diabetes. V. Scheel.—p. 1119.

July 9, No. 29, pp. 1177-1232

110 *Alimentary Gastro-Enteritis and Xerophthalmia in Infants. S. Monrad.—p. 1177.

107. **Roentgenotherapy of Sarcoma.**—Nordentoft makes a practice of reporting once or twice a year on the present status of patients to whom he has given a course of treatment with the Roentgen rays at some time for malignant disease. He lists them alphabetically by arbitrary letters, the first series being Aa, Bb, etc., the third, Ca, Cb, etc. He here describes the outcome in eleven cases of sarcoma. One farmer of 37 had had one testicle removed on account of sarcoma. Within a few months there were signs of extension of the tumor into the abdomen, with great emaciation, anemia and pains requiring morphin constantly. Under a month of roentgenotherapy the pains disappeared, weight, appetite and sleep became normal and the hard tumor deep in the abdomen could no longer be palpated. Now, four months later, his earning capacity is fully restored. The pains subsided by the next day after the first exposure. Apparently complete recovery is also evident in two other men of 25 and 71 with sarcoma in the pelvis. A third succumbed later to infarction of the lung and recurrence of the tumor. One man of 60 with a large ulcerating sarcoma on the buttocks, of eight months' standing, by the fifth week after the first exposure had merely a depressed cicatrix left as the relics of his malignant disease. Another man of 70 had a tumor in the neck encroaching on the median line and causing suffocation. It had been growing for four months. Under a single exposure it subsided like dew before the sun. Six months later there was a fatal recurrence in the mediastinum. A similar sarcoma in the neck and mediastinum of a man of 64 did not seem to be influenced by the exposures and the patient succumbed, but the improvement was pronounced in a third case, the large tumor visible in the roentgenogram finally disappearing almost completely. A clinical cure was also realized in a case of sarcoma of the small pelvis in an unmarried woman. There has been no recurrence in one case of melanosarcoma of the iris and orbit treated by Roentgen exposures after the operation, but in several similar cases the patients died within a few months from heart failure or diffuse metastasis.

108. **Widening the Indications for Roentgenotherapy.**—Supplementary to the above communication, Nordentoft describes excellent results from roentgenotherapy in a case of acromegaly, the subjective disturbances subsiding and earning capacity being regained, although the acromegalic changes were stationary. Also in a case of polycythemia, the much enlarged liver and spleen subsiding to normal size, although the blood picture showed no change. Also in a case of retroperitoneal tuberculous glands after a number of glands had been removed by a laparotomy. Great improvement followed the exposures also in a case of hypertrophied prostate with retention. Even those writers who do not admit that the prostate is sensitive to the Roentgen rays, recognize that they may have a favorable action on the irritative and nervous symptoms with hypertrophied prostate. Their action here parallels that of Roentgen exposures in case of pylorospasm and hypersecretion with gastric ulcer. Nordentoft emphasizes that roentgenotherapy in the early stages of prostate trouble might prevent the development of the hypertrophy, adding that it would be interesting to investigate whether hypertrophy of the prostate occurs among men working on or with Roentgen apparatus.

110. **Alimentary Gastro-Enteritis and Xerophthalmia in Infants.**—Monrad does not agree with Bloch's statements summarized in abstracts in THE JOURNAL, May 12 and 19, 1917, pp. 1444 and 1516), in regard to disturbances in infants from too exclusive carbohydrate feeding or fat deficiency. Monrad has examined the recent records of his service and has found that 205 infants with fat dyspepsia were kept on fat-poor diet for over two months without any symptoms developing suggesting injury from fat deficiency. His experiments and experiences apparently indicate that it is immaterial whether an infant is getting 0.75 or 0.5 or 0.1 per cent. of fat if it is getting the suitable amount of carbohydrates. He protests against Bloch's assumptions as to xerophthalmia being a fat deficiency affection, saying that it is not fat deficiency but pasteurization of the milk which entails the xerosis. Five infants with severe fat dyspepsia and complicating pyuria, otitis or pyodermia, kept on fat-poor food, did not thrive but lay with eyes closed and it was found that all had xerosis of the conjunctiva. Until a few months before this the children in his service had been given raw milk, but a change of owners at the dairy was followed by pasteurization of all the milk. These infants had thus been fed with sterilized milk mixtures, a denatured food, lacking in vitamins, and the conditions were thus propitious for the development of xerosis. Proof of this assumption was obtained by keeping the children on the same food as before but preceding each feeding with 10 gm. of raw fresh milk. The result was the prompt subsidence of the xerosis. It had entirely disappeared by the end of a few weeks. This experience, he thinks, establishes beyond question that it could not have been the small amount of fat in the fresh milk given, but the vitamin content which was responsible for the subsidence of the xerosis. Xerophthalmia must thus be regarded as a consequence of lack of vitamins.